

A photograph of a modern skyscraper with a roller coaster on top, set against a clear blue sky. The building has a sign that says "BBVA Bancomex". The roller coaster is green and yellow. The building is surrounded by a cityscape and greenery.

**BBVA** Research

# Mexico Banking Outlook

First half 2019

Mexico Unit



Creating Opportunities

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Closing date: **8 February 2019**

## 1. Summary

In 2018, performance was uneven among the main banking variables. On the one hand, the outstanding balance of credit granted by commercial banks to the non-financial private sector grew at a real annual rate of 6.7%, up from 6.4% recorded in 2017. The main source of this growth came from credit to companies, which increased at an average real annual rate of 9.8%, vs 8.6% in 2017, and contributed 5.5 percentage points (pp) to the 6.7% growth. In the section regarding the credit situation of the Mexico Banking Outlook, we show that the boost in credit to companies was the result of replacing corporate financing sources from abroad in favor of domestic bank loans.

In contrast, growth and contributions from consumer credit and mortgage loans were lower. Consumer credit grew at an average real annual rate of 2.1% (vs 3.6% in 2017) and contributed 0.7 pp to the total credit growth in 2018, whereas mortgage loans progressed at an average real annual rate of 3.7%. Although this was slightly higher than in 2017 (3.5%), its contribution to total growth was the lowest (0.5 pp). In this issue, we present evidence that the slowdown in consumer credit appears to be related to the lower growth rate of personnel employed in the economic sectors, to the delayed effects of the deterioration in real wages recorded in 2017, and to the fact that the recovery experienced in 2018 was not sufficient to encourage a greater demand for credit. For its part, we see that the performance of mortgage loans may have raised due to expectations of an increase in mortgage interest rates and house prices.

On the other hand, traditional banking deposits recorded a real annual growth rate of 4.8%, 0.4 pp less than the average observed in 2017, with variable performance among their components. With regard to bank deposits, we show how the growth rate of term deposits accelerated, favored by an environment of higher interest rates which made saving in this type of instrument more attractive. As a result of this, for the first time in the last five years, the dynamism of term deposits has been the driving force behind the growth of traditional deposits, contributing 3.5 pp to total growth in 2018, up from the 1.7 pp contributed to the growth rate in 2017.

This contrasts with what was observed in previous years, in which the impetus came mainly from demand deposits. Over the year, we observed that this deposit component moderated its dynamism, reducing its average contribution to the growth of traditional deposits from 3.5 pp in 2017 to 1.3 pp in 2018. The lower demand for this type of instrument would be linked to the moderate recovery of household purchasing power, which limited stronger consumer growth and reduced the use of demand deposits for transactional purposes, and linked to the agents' greater preference for term deposits driven by higher interest rates.

In addition to the lending situation, we present two special topics that delve into the performance of consumer credit and corporate financing, the latter with particular emphasis on Foreign Currency (FC) debt. On the special matter of consumer credit, we present various indicators that provide an indication that its slowdown has not been an isolated event, i.e., that a number of unfavorable factors have contributed to this performance. An example of this is the slower growth rate of personnel employed in the economic sectors (as indicated by the global personnel employment index for economic sectors [Índice Global del Personal Ocupado de los Sectores Económicos, IGPOSE]), the increase in inflation, and the downturn in consumer credit quality indicators (increase in the delinquency rate and in the adjusted delinquency rate).

In the second special topic on corporate financing, we find that in 2018 bank credit in national currency (NC) was the main driving force behind growth, and this has been consolidated as the largest source of corporate financing. We also present evidence that this dynamism is closely linked to exchange rate developments; in such a way that the exchange rate depreciation recorded between 2014 and 2016 may have altered the current preferences of companies that opted to obtain domestic loans instead of funding from abroad. In spite of this change in behavior, we believe that, for the time being, risks to the Mexican banking system from FC indebtedness of companies remain limited, as this portfolio maintains low levels of deterioration and the most indebted companies in FC receive income that either comes from abroad or is linked to movements in the exchange rate, which allows them to have natural currency hedging.

As such, in this presentation on Banking Outlook, we observe that, in general, over the course of 2018, the dynamism of banking variables was affected by a less favorable macroeconomic environment than that of 2017, as GDP growth was lower, benchmark interest rates increased, and the annual increase in the total number of workers belonging to the IMSS fell (Instituto Mexicano del Seguro Social - Mexican Social Security Institute). For this reason, we believe that, in order to observe higher growth in banking activity, economic activity, employment and real income for current and potential customers will need to be strengthened.

## 2. Market Conditions

### 2.a In 2018, the main source of growth in bank credit granted to the private sector was that allocated to companies

#### 2a.1 Introduction

In 2018, the average real annual nominal growth rate in the current loan portfolio granted by commercial banks to the non-financial private sector was 6.7% (12.0% nominal). This rate was higher than the 6.4% recorded in 2017, reflecting a more favorable credit performance in 2018 compared to the previous year. Likewise, the 6.7% contribution to real annual credit growth in the private sector recorded in 2018 by its three components was as follows: business loans contributed 5.5 percentage points (pp) of the 6.7 pp by which the total credit grew; mortgage loans contributed 0.7 pp; and consumer credit contributed 0.5 pp.

The dynamism observed in 2018 was in line with the moderate growth in economic activity, as GDP grew by 2.1% in 2017 and preliminary data for 2018 indicates that this was slightly lower (2.0%). A second factor that could have limited an improved credit performance in 2018 (compared to the dynamism observed in 2017) was the increase in benchmark interest rates. For example, the Mexican 28-day Equilibrium Interbank Interest Rate (Tasa de Interés Interbancaria de Equilibrio - TIIE 28) increased from 6.15% in January 2017 to 7.62% in December of that year, and continued increasing to reach 8.59% in December 2018. As such, over the last two years, the increase in benchmark interest rates, which are used to set the interest rates for some bank loans, as is the case for those granted to companies, was a factor that could have negatively affected the demand for credit.

A third element that may have limited credit growth is the lowest annual increase in the number of workers registered with the Mexican Social Security Institute at the end of 2018 (661,000 workers) compared to the number registered at the end of the 2017 (802,000 workers). A lower increase in the number of formal workers registered with the IMSS would be reflected in a lower growth rate of consumer credit and mortgage loans.

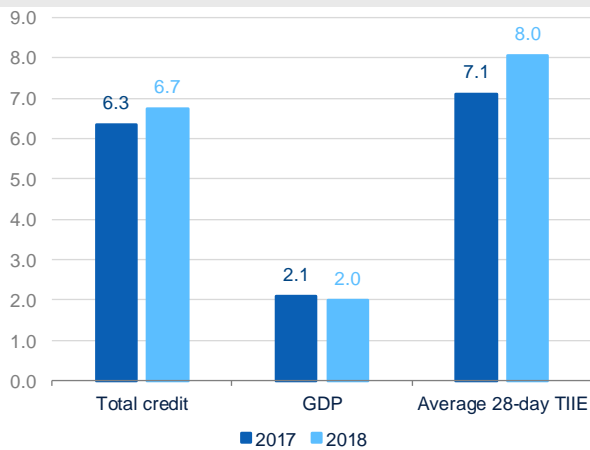
As will be discussed later in this section, some factors that had a positive influence on credit performance in 2018, particularly on business loans and mortgage loans, included: i) the replacement of corporate financing sources from abroad in favor of the country's bank loans, which boosted the growth of business loans, in particular to larger companies, and; ii) the expectation that mortgage interest rates could increase at a higher rate than they were over the course of 2018, which might favor the demand for this type of credit because, for a certain type of customer, postponing taking out a loan could involve increased cost in the future if the interest rate on these loans were also to increase by a higher percentage. Finally, consumer credit did not have any elements which favored its growth rate, which, to a large extent, explains why its average growth rate in 2018 (2.1%) was lower than in 2017 (3.6%).

#### 2a.2 Performance of bank credit to the private sector in 2018: total and by component

While in 2018 total growth in the current loan portfolio to the private sector recorded an improved performance over the course of the year compared to the previous year, in terms of GDP growth and benchmark interest rates, the macroeconomic situation was not conducive to sustaining greater dynamism (Figure 2a.1). The improved performance observed, measured through increased real annual average growth rates, show that, to a large extent, the greatest

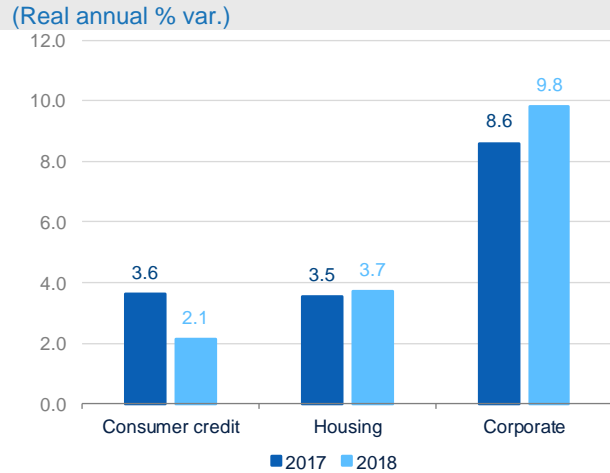
dynamism mainly relied on credit to companies, as its real annual average growth rate in 2018 (9.8%) was higher than in 2017 (8.7%). For its part, the improved performance in the growth of mortgage loans in 2018 (3.7%) was marginal compared to that of 2017 (3.6%). On the other hand, consumer credit recorded a lower annual average growth rate in 2018 than in 2017 (Figure 2a.2).

Figure 2a.1 Total current credit to the non-financial private sector, GDP and TIEE28 (Real annual % var. and percentage points, pp)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)

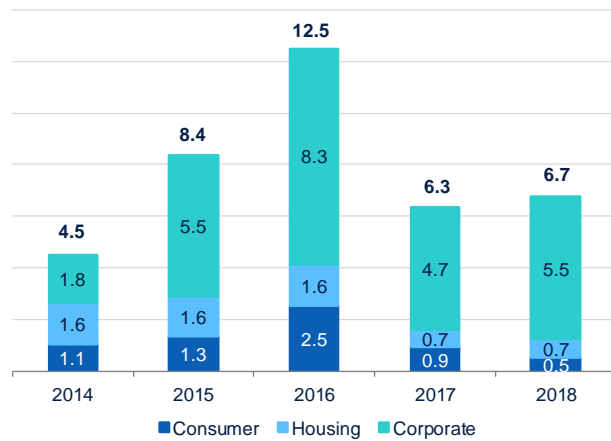
Figure 2a.2 Current bank credit by category: consumer credit, mortgage loans and business loans in 2017 and 2018 (Real annual % var.)



Source: BBVA Research based on data from Banco de México and INEGI

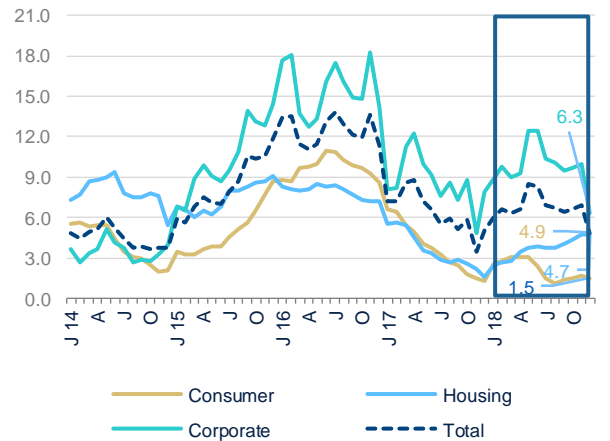
A better perspective on the performance of credit to the private sector can be obtained by analyzing the contribution of its components to total credit growth. As discussed, the contribution to growth observed by portfolio was as follows: business loans contributed 5.5 pp, consumer loans contributed 0.5 pp, and mortgage loans 0.7 pp (Figure 2a.3). The above figures indicate that, in 2018, credit to companies was the main source of momentum for total credit, and its contribution to the 5.5 pp increase accounted for 82% of the total credit growth rate. It is worth mentioning that, in the past few years, credit to companies has been the main source of momentum behind total private sector credit, which is why, since 2014, this is the credit category that makes up the largest share of total credit. Additionally, since 2015, credit to companies has constituted over 50% of the total credit growth rate for the non-financial private sector. This in turn has been reflected in a lower absolute and relative importance of consumer credit and mortgage loans (or loans to families) as a source of momentum for total bank credit, as can also be seen in data from 2015 to 2018 (Figure 2a.3).

Figure 2a.3 Bank credit to the non-financial private sector: contrib. to growth by component (pp)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)

Figure 2a.4 Bank credit to the non-financial private sector by component (Real annual var %)



Source: BBVA Research based on data from Banco de México and INEGI

On the other hand, it is worth mentioning that in the first half of 2018 (1H18), the real average annual total credit growth rate (7.1%) was greater than the rate recorded in the second half of that year (6.4%). The difference in performance is also linked to the half-year evolution of the components of the total portfolio. In the first half of 2018, the real average rate of growth of credit given to companies was 10.3%; in the second half of 2018, it fell to 9.3%. The same happened to the consumer credit growth rate. The average growth rate for the first half of the year was 2.8%, but in the second half of the year, it fell to 1.4%. By contrast, the average dynamism of mortgage loans in the first half of 2018 (3.2%) was lower than that of the second half (4.2%). If the inertia observed in the dynamism of the components of business loans and consumer credit during the second half of 2018 (2H18) prevail, it could be expected that in 2019 total credit would grow at a more moderate rate than it did in the previous year.

### 2a.3 Replacement of foreign credit boosts lending to companies

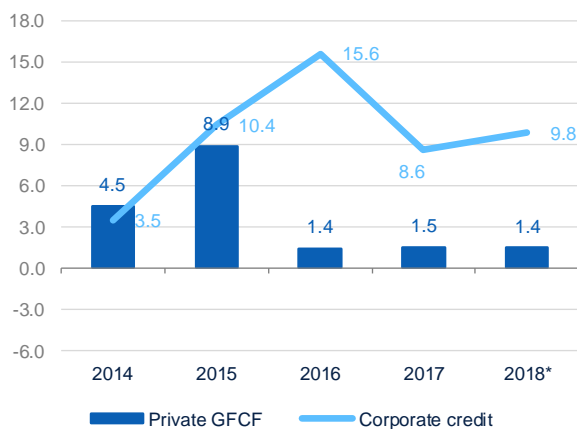
Since 2015, there has been an acceleration in the growth rate of loans extended to companies, even reaching double-digit real growth rates in that year and in 2016 (Figure 2a.5). The 9.8% real average annual growth of this loan portfolio's in 2018, nearly double digits, should be considered positive, considering that there were factors, such as the performance of the economic activity that showed only moderate dynamism relative to previous years (preliminary data indicate that the GDP for that year grew by only 2.0%, lower than the 2.8% average growth recorded in the 2014-2017 period).

An important variable, which is also considered to be associated with the performance of business loans, is the dynamism of the Gross Fixed Investment or Gross Fixed Capital Formation (GFCF) of the private sector. If investment is growing at high rates, then it is to be expected that the demand for financing from businesses would increase for new investment projects being carried out. Regardless of the behavior of the private sector GFCF in 2015, from 2016 onwards, this variable has grown at modest rates: from 2016 to 2018, it was 1.4% on average (Figure 2a.5). This private sector GFCF growth rate over the past three years seems to be incompatible with the high rate of growth of loans to companies, as was recorded from 2016 to 2018. That is to say, the slow rate of growth of the GFCF would

indicate that the demand for business financing for new investment projects is not very large, and the demand for financing is driven by alternative uses to investment.

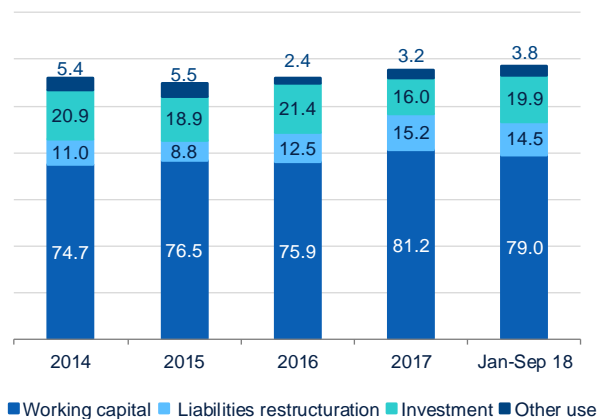
According to Banco de México's Credit Market Survey, among companies that have used bank loans, four alternative uses for those loans have been identified: working capital (for which a greater proportion of companies use the funds obtained), investment (the second most popular use), restructuring of liabilities, foreign trade transactions, and other uses. From these statistics, it can be noted that the percentage of companies that use bank financing for working capital and to restructure their liabilities began increasing in 2015 (Figure 2a.6).

Figure 2a.5 Current business loans: real average annual growth rate (%)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)  
 \* For 2018, the average from the first three quarters of the year were considered

Figure 2a.6 Purpose of new bank loans (% of total number of companies)

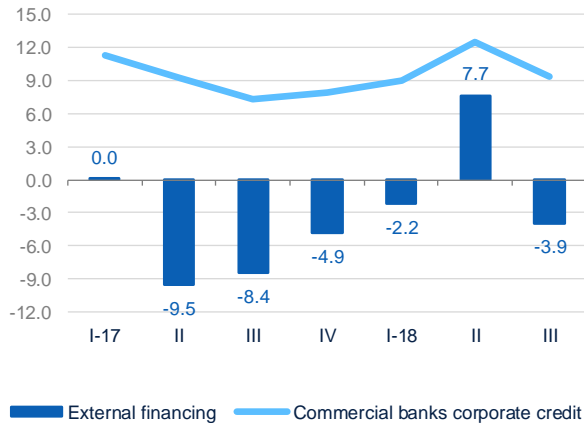


Source: BBVA Research based on data from Banco de México and INEGI. The sum of the percentages may be higher than 100, as companies can choose more than one option.

In particular, the dynamism observed in business loans from 2017 to 2018 offers some explanation for the fact that the country's companies, especially the large ones, have substituted financing from abroad. This has been achieved by acquiring bank loans within the country that have replaced external sources of financing that come from the issuance of debt in international financial markets or in the acquisition of credit from foreign banks. The information available from Banco de México as at the third quarter of 2018 (3Q18) illustrates this replacement of sources of financing, which has essentially taken place in six of the seven quarters between 1Q17 and 3Q18 according to the most recent data available (Figure 2a.7).

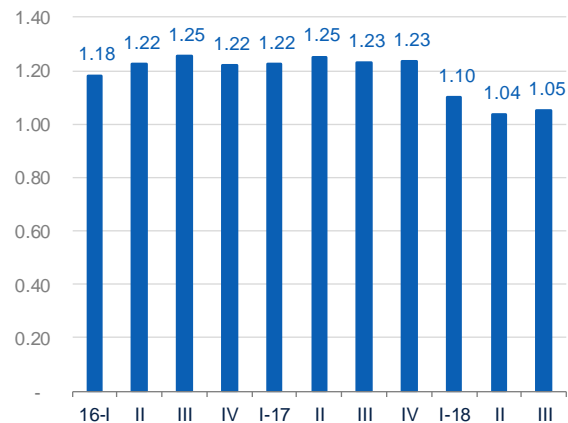


Figure 2a.7 Bank credit and external financing to companies (Var % real annual end-of-quarter balances)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)

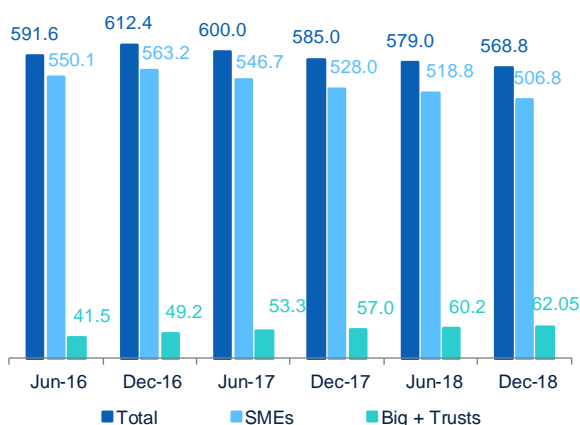
Figure 2a.8 Proportion of external financing to companies relative to current business loans (times)



Source: BBVA Research based on data from Banco de México and INEGI

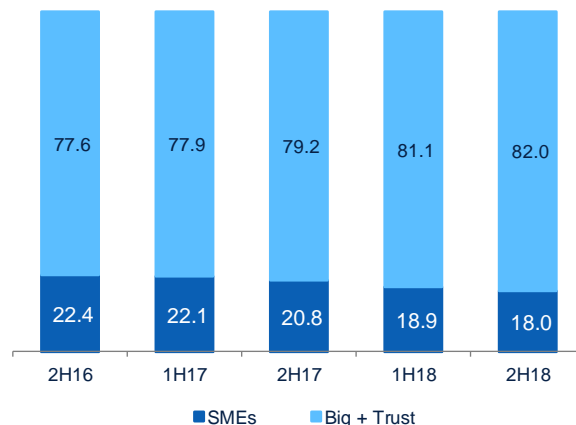
The greater dynamism of business loans with regard to external financing, which these companies have obtained, made the proportion of total funding from abroad relative to current business loans experience a major drop, mainly over the course of 2018. For example, in 2017, on average, total funding from abroad accounted for 1.23 times the current credit granted by commercial banks in that year. On the other hand, for the first three quarters of 2018, that average ratio was reduced to 1.06 times current commercial credit (Figure 2a.8).

Figure 2a.9 Number of businesses that receive bank credit by size (in thousands)



Source: BBVA Research based on data from the CNBV

Figure 2a.10 Business loans: percentage structure of balance by company size



Source: BBVA Research based on data from the CNBV

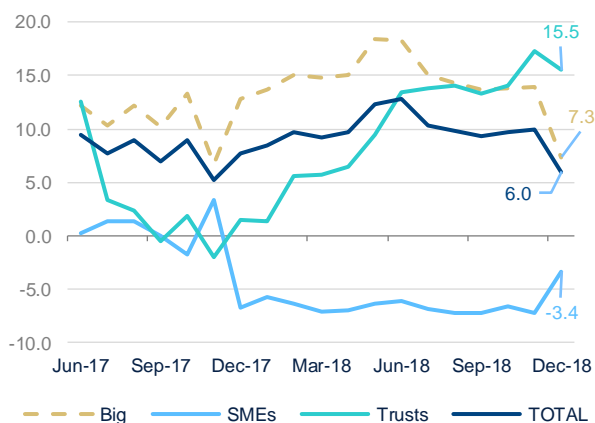
The replacement of domestic bank credit with business funding sources from abroad is understandable, considering that the number of large companies and trusts (according to the grouping of the CNBV [National Banking and Securities Commission, CNBV]) who have received bank credit increased from June 2016 to December 2017 by 49.4%, exceeding 41,500 on the first date and a little over 62,000 on the second (Figure 2a.9). The importance of large

enterprises is noteworthy, considering that the balance of bank credit extended represented 82.0% of the total average credit to companies in 2H18 (Figure 2a.10). These figures indicate that large enterprises possess the characteristics that enable them to satisfy the requirements for both obtaining financing from outside sources and obtaining it from domestic banking institutions with relative ease and speed, meaning large enterprises are in a position to replace one source of funding with another.

One impact related to this substitution between domestic and foreign funding sources is also clear from the data on the growth rate of the balance of credit extended by commercial banks to firms by productive entity size, which indicates that credit has contracted, in real terms, in the case of credit granted to small and medium-sized enterprises (SMEs), while channeling to larger firms has grown (Figure 2a.11). This last point would indicate that larger firms—that have been able to replace their foreign sources of financing with domestic bank credit—may be capturing some of the credit that would otherwise be granted to smaller productive units.

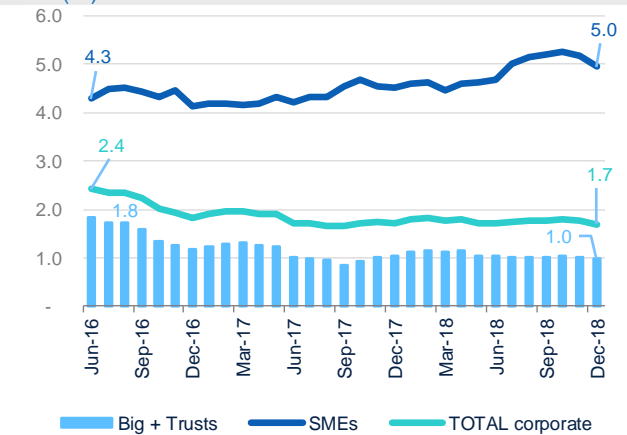
Furthermore it is possible that the macroeconomic environment of the past few years, during which growth of GDP and gross fixed investment have been low, coupled to an environment of rising interest rates, are factors that have particularly affected credit channeled to SMEs. This credit portfolio has recorded negative growth rates since the end of 2017 (Figure 2a.11), while the number of SMEs that have received bank credit has declined, particularly from the end of 2016 through December 2018 (Figure 2a.9). Finally, the delinquency rate and the impairment of the quality of the credit portfolio of SMEs has increased since the first months of 2017 (Figure 2a.12).

Figure 2a.11 Current banking credit to companies by size (real annual Var %)



Source: BBVA Research based on data from the CNBV

Figure 2a.12 Delinquency rate for credit to companies by size (%)

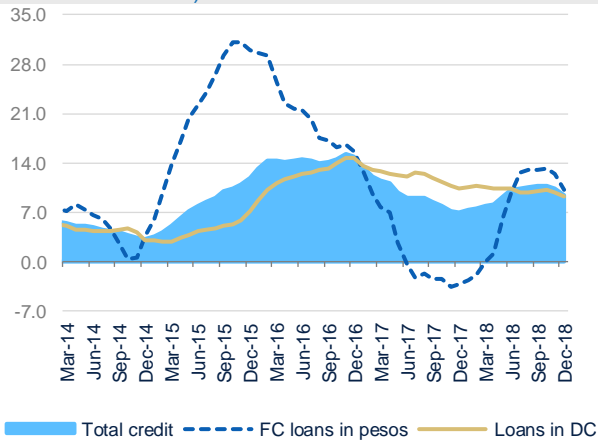


Source: BBVA Research based on data from the CNBV

Finally, another of the factors that has an impact on the growth dynamics of credit to companies is its breakdown by currency, since, in periods of exchange-rate depreciation, the foreign currency (FC) balance of credit valued in MXN can raise its growth rates without necessarily triggering an overall balance growth in USD. In 2018, the credit in foreign currency (FC) valued in MXN represented an average of 22.3% of total credit to companies, similar to the share observed in 2017 (22.0%) and below the 24.5% share reached in 2016 (the highest point observed in the 2014-2018 period).

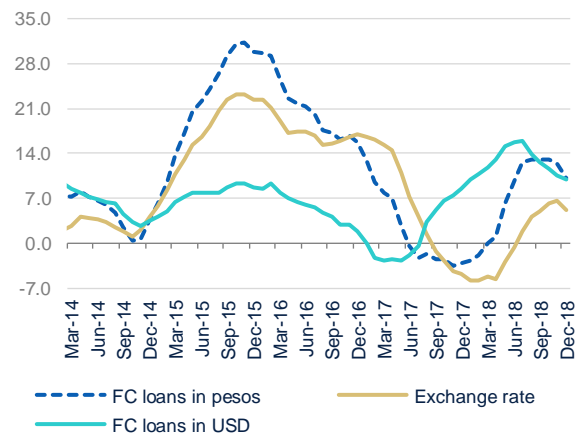
This highlights that, in 2015 and 2016, credit to companies in FC was the main driver of the dynamism in credit to companies, and it again became the largest source of momentum in 2H18. (Figure 2a.13). The dynamism of credit to companies in FC, however, had different origins. In 2015 and until mid-2017, the growth of this type of credit (valued in MXN) was the result of a valuation effect, due to exchange-rate depreciation. From 2H17 and until the end of 2018, the momentum has been a greater credit balance in FC, valued in USD (Figure 2a.14). Thus, for 2018, there was an observed annual dollar-variation growth rate of 12.8%, more than twice the rate in 2017 (4.8%) or the average for the previous four years (5.5%). Section 3b offers a more detailed analysis of the evolution of corporate debt in FC, its components and the characteristics of the companies that acquire this debt.

Figure 2a.13 Current business loans by currency (Real annual var %)



Source: BBVA Research based on data from Banco de México

Figure 2a.14 Credit in FC valued in MXN, in USD and exchange rate (Real annual var %)



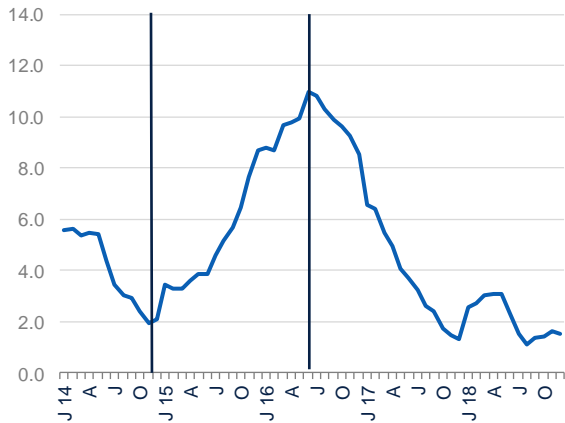
Source: BBVA Research based on data from Banco de México

In summary, based on the issues addressed on credit to companies, it is clear that unfavorable aspects of the recent macroeconomic environment have only affected the credit of SMEs. This has not happened, however, to the credit extended to larger enterprises, as that credit has behaved in a manner that is favorable to relatively high growth rates and even to reducing the delinquency rate. The source of this greater dynamism has been the replacement of external sources of financing with domestic sources, which could be a response to the greater tightening of international markets. This effect has been reflected in the greater dynamism of FC credit.

## 2a.4 Consumer credit keeps downward trend, reflecting limited recovery in income and formal employment

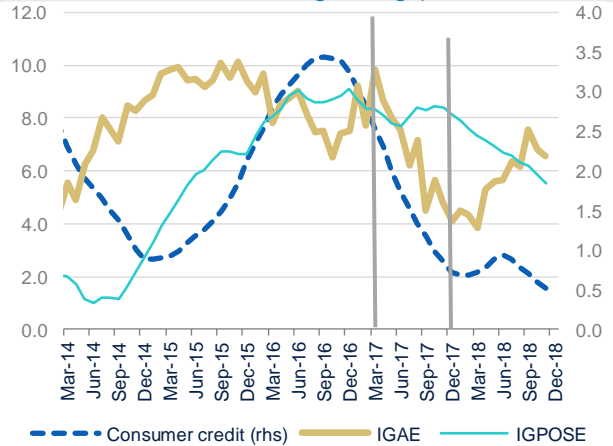
In October 2013, consumer bank credit stopped registering double-digit real annual growth rates and, after a lengthy slowdown process in the growth rate that lasted until November 2014, it once again accelerated until June 2016. In that last month, its real annual growth rate was 11.0%. Beginning with the following month of that year, consumer bank credit began a downward trend without re-recording double-digit real annual growth rates. Moreover, from July to December 2018, this kind of credit reached real annual growth rates lower than 2.0%, for an average in 2H18 of 1.4%, half the recorded average for 1H18 (Figure 2a.13).

Figure 2a.15 Current consumer credit (Real annual var %)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)

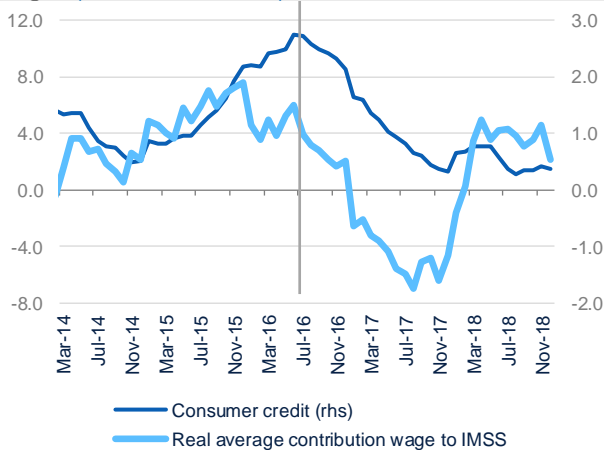
Figure 2a.16 Consumer bank credit, IGAE\* and IGPOSE\*\* (Annual var %, 6-month moving average)



Source: BBVA Research based on data from Banco de México and INEGI. \*IGAE: Global Economic Activity Index \*\*IGPOSE: Global personnel employment index for economic sectors

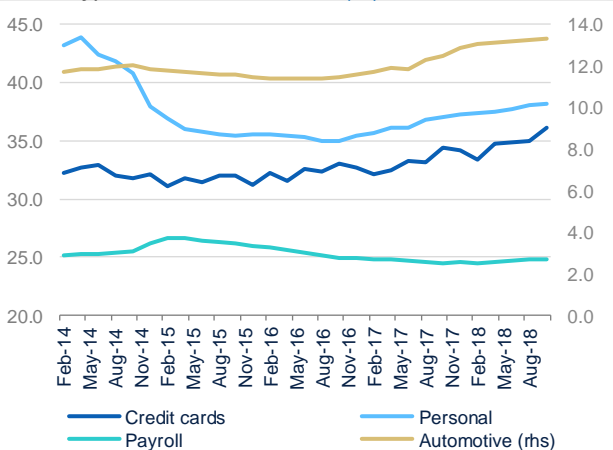
The above figures refer to a significant and prolonged slowdown in consumer credit, which is due, among other factors, to the slower pace of growth in economic activity and to the lower employment rate measured according to the global personnel employment index for economic sectors (IGPOSE). As discussed in greater detail in section 3, these two factors contribute to the slowing of the consumer credit growth rate (Figure 2a.16), in tandem with the effect of the contraction in average real wages of workers registered with the Mexican Social Security Institute (IMSS).

Figure 2a.17 Consumer banking credit and real IMSS wages (Real annual var %)



Source: BBVA Research based on data from Banco de México (Banxico) and INEGI (Instituto Nacional de Estadística y Geografía - Mexican National Institute of Statistics and Geography)

Figure 2a.18 Weighted average interest rate by balance for various types of consumer credit (%)

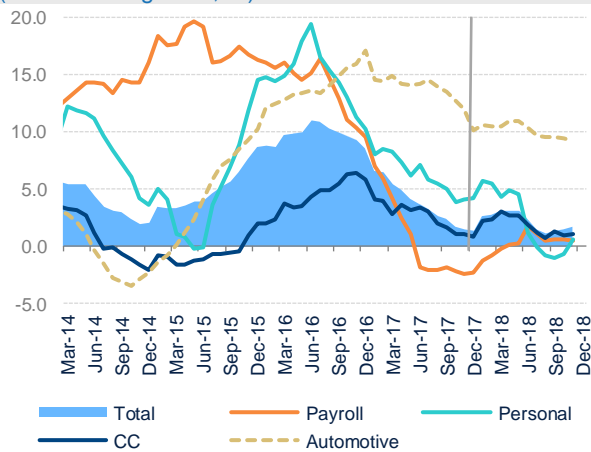


Source: BBVA Research based on data from Banco de México

The average IMSS wage is received by workers of the formal private sector; it is a useful indicator on individuals who are able to obtain a bank loan because they have a job that allows them to verify their source of income. As these average wages are negatively affected, as happened in 2017 (when those wages recorded an annual average contraction of 1.2%), the purchasing power of formal workers decreases (Figure 2a.17). This also reduces workers' capacity to pay their current consumer credit or loans they would like to take out in the near future in a timely manner. That is, the contraction of real wages, by reducing payment capacity, can also reduce the future demand for consumer credits until the potential users of the credits consider themselves to have an income that is sufficient to enable them to fulfill the financial commitment that they have taken on while also paying the rest of their recurring costs.

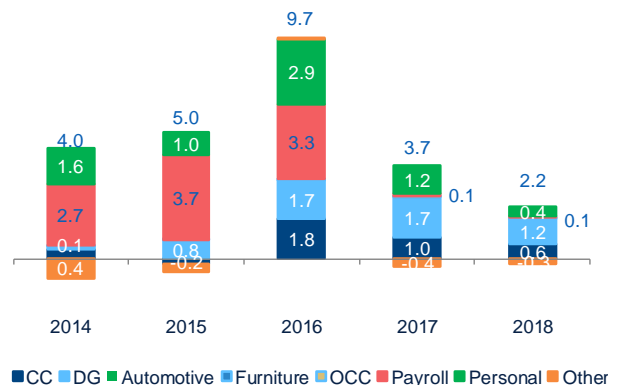
One additional factor that may have contributed to reducing the credit growth rate is the evolution of the interest rates associated with this kind of financing, which, although they did not proportionally reflect the increases observed in different benchmark interest rates, did experience a continual, if moderate, growth. In particular, the weighted average interest rate per credit card balance increased from 32.4% in 2016 to 34.8% in 2018; for personal loans, this rate rose from 35.3% to 37.8% in the same period; and automotive loans increased from 11.4% in 2016 to 13.2% in 2018 (Figure 2a.18).

Figure 2a.19 Consumer credit by segment (Real annual growth, %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2a.20 Contribution to consumer credit growth (percentage points)



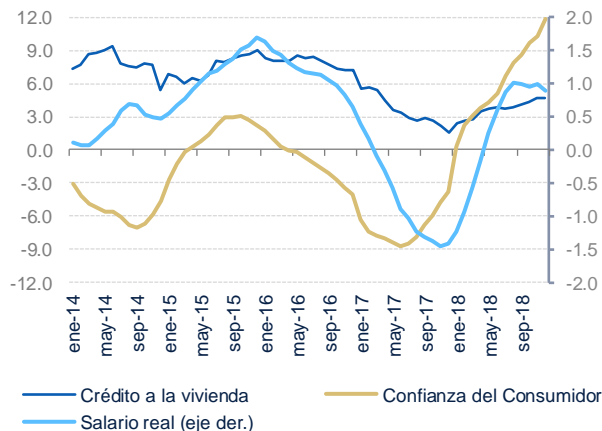
Source: BBVA Research based on data from Banco de México and INEGI

The observed drop in consumer credit from a real annual average growth rate of 3.7% in 2017 to 2.1% in 2018 reflected the slowdown in all consumer segments, mainly in automotive and personal loans. Automotive loans went from a real average annual growth of 13.6% in 2017 to only 10.1% in 2018, while personal loans grew by 2.2% in 2018 (versus 6.2% in 2017). The rest of the segments also slowed their average annual expansion rate relative to the previous year (Figure 2a.19). Credit card financing (CC) saw a rate reduction of 0.7 pp (from 2.5% to 1.8%), and payroll loans saw a marginal drop in their real average growth rate, from 0.5% to 0.3%. Thus, in 2018, despite its moderate performance, the most influential segment in consumer portfolio growth was loans for consumer durables ((LFCD, 52.8% or 1.2 pp of the total rate), thanks to automotive loans, followed by credit cards (28.8% or 0.6 pp) and personal loans (18.8% or 0.4 pp). Payroll loans came last, contributing only 2.8% or 0.1 pp (Figure 2a.20).

## 2a.5 Mortgage loans show signs of recovery

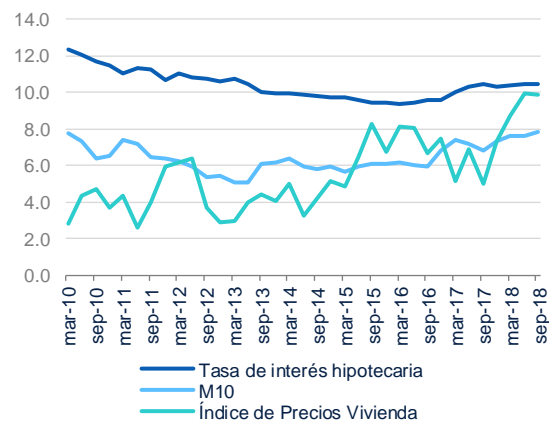
In 2018, mortgage loans saw real average annual growth of 3.7%, almost equal to the growth observed in 2017 (3.6%). As was the case with consumer credit, credit issued for housing also slowed significantly in early 2017. However, unlike consumer credit, from January 2018 this type of credit began to experience a modest but steady recovery in its growth rate; in that month, it saw an annual real growth rate of 2.5% and closed the year with a rate of 4.7%. This suggests that the contraction of the average salary for workers registered with the IMSS, which was recorded over the course of 2017, was closely linked to the slowdown that mortgage loans experienced that year. Ever since the real average IMSS salary began to grow again in 2018, home loan performance has improved (Figure 2a.21). Other of the factors that may also have contributed to recovery of mortgage loans is households' greater optimism with respect to the progress of the general state of the economy and their own personal financial situations, a perception that encouraged them to sign on to a longer-term loan. For example, the consumer confidence index recorded an average growth rate of 11.9% in 2018, after the 3.7% fall reported in 2017 (Figure 2a.21).

Figure 2a.21 Mortgage loans  
(Real annual var %)



Source: BBVA Research based on data from Banco de México

Figure 2a.22 Mortgage loans  
(Real average annual var %)



Source: BBVA Research based on data from Banco de México, CNBV and the SHF

The increase in the interest rate for mortgage loans has been more moderate than the rate observed for longer-term benchmark interest rates. In the preceding year (between Dec-17 and Dec-18), the mortgage interest rate increased 20 basis points (bp), significantly less than the increase observed in the same period for ten-year M Bonds, which rose 148 bp. The foregoing, along with the average increase of 9.5% observed in housing prices between January and September 2018, could have incentivized acquisition of this type of credit in anticipation to a future increase in rates or a greater price increase in housing (Figure 2a.22). Moving forward, a higher home loan growth rate will depend as much on the creation of more formal employment as on the restoration of households' purchasing power.

## **2a.6 Greater dynamism in private sector credit will depend on the strength of economic activity, employment and income**

In 2018, the main driver of non-financial private sector credit came from credit extended to businesses; nevertheless, this credit was not supported by the performance of the main variables of economic activity but, rather, by an effect produced by replacing foreign financing with internal bank financing. A more favorable macroeconomic environment in terms of greater growth in economic activity and gross fixed investment, which, moreover, is accompanied by the reduction in benchmark interest rates, will be reflected in a better performance in bank credit to SMEs and possibly also in greater dynamism in the bank credit that has recently been observed in larger companies. This would also help prevent the main driver of bank credit growth from coming entirely from bank credit extended to large companies, as it would also come from bank credit extended to companies in general, supported by internal macroeconomic variables.

The information analyzed highlights that a more dynamic expansion of loans to households (consumer credit and mortgage loans) requires purchasing power and the ability to take out loans to grow considerably as the result of the increase in real income of current and potential customers. In addition, the expansion of credit to families also requires the number of accredited (or current) customers to increase substantially, which is feasible if the number of people who have formal employment also grows dynamically, as such growth would result in recurring and verifiable income that would enable them to face their financial commitments with greater certainty.

## 2.b Traditional deposits reverse their downward trend, albeit at a moderate pace

### 2b.1 Traditional deposits reverse their downward trend, albeit at a moderate pace

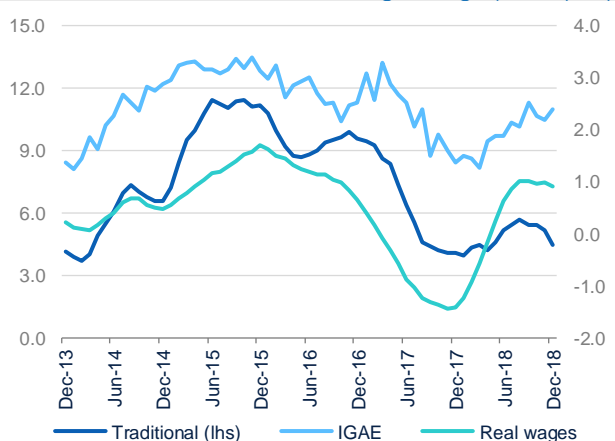
In December 2018, traditional deposits in commercial banks (sight deposits + term deposits) registered a real annual growth rate of 2.9% (nominal 7.9%). With this result, in 2018, the average real annual growth rate for traditional deposits was 4.8%, 0.4 percentage points (pp) lower than the observed 2017 average. In the first six months of 2018, the real traditional deposit growth rates continued to rank below double digits (Figure 2b.1), but they succeeded in reversing the downward trend that had emerged in the second half of 2017. Beginning in September 2018, a slowdown began to re-emerge, as was reflected in the slow recovery of real wages, a pace of economic activity that has remained relatively stable (Figure 2b.2), and the draw of higher interest rates on term deposits

Figure 2b.1 Traditional deposits (sight + term)  
(Real annual variation, %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.2 Traditional deposits, IGAE and real wages  
(real annual variation, 6-month moving average (6mma), %)

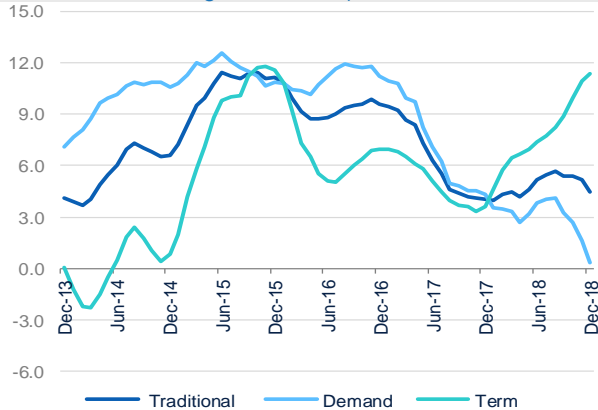


Source: BBVA Research based on data from Banco de México and INEGI

By deposit type, sight and term deposits showed a differentiated performance. In particular, over the course of 2018, term deposits accelerated their growth rate, favored by an environment with higher interest rates that made the savings in this kind of instruments more attractive. In fact, for the first time in the last five years, the dynamism of term deposits has driven expansion of traditional deposits, unlike in previous years, during which the momentum came mainly from sight deposits (Figure 2b.3). Thus, in 2018, term deposits (39.3% of traditional deposits) doubled their contribution to the growth rate of traditional deposits, contributing 3.5 pp to the 4.8% of total deposit growth in 2018, greater than the 1.7 pp contributed to the increase in 2017 (Figure 2b.4). Sight deposits (60.7%) moderated their dynamism, reducing their average contribution to the growth of traditional deposits from 3.5 pp in 2017 to 1.3 pp in 2018 (Figure 2b.4). The lower demand for this type of instrument would be linked to two effects: first, the moderate recovery of household purchasing power, which limited stronger consumer growth and reduced the use of demand deposits for transactional purposes, and, second, the agents' greater preference for longer term deposits driven by higher interest rates.

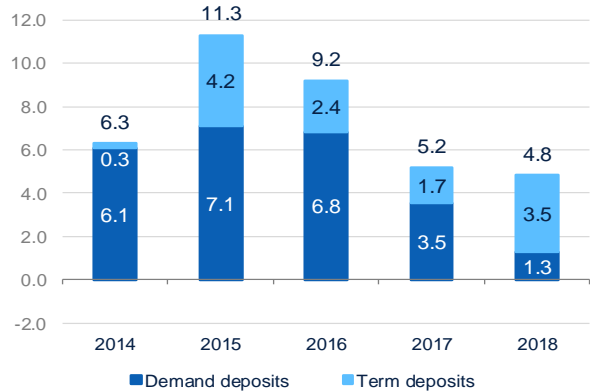


Figure 2b.3 Traditional deposits by type of deposit. (Actual annual change, 6MMA, %)



Source: BBVA Research based on data from Banco de México and INEGI

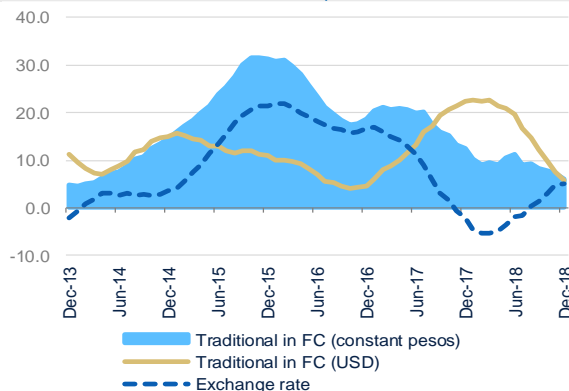
Figure 2b.4 Contribution to average growth of traditional deposits by deposit type, (pp)



Source: BBVA Research based on data from Banco de México and INEGI

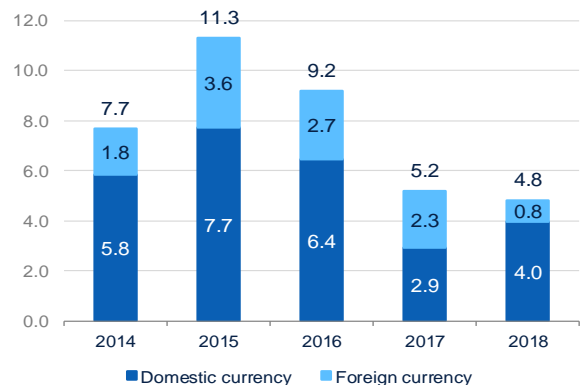
In the breakdown by currency, growth in foreign currency (FC) deposits has slowed down (16.7% of traditional deposits) to an average real variation of 5.5% (10.6% nominal value) in 2018, almost a third of the 15.1% real growth rate observed in 2017 (Figure 2b.5). This reduced buoyancy can be explained primarily by the capital repatriation program driven by the SHCP (Secretaría de Hacienda y Crédito Público — Ministry of Finance and Public Credit) between January and October 2017<sup>1</sup>, which led to a temporary increase in FC traditional deposits. As the repatriated funds were allocated to the purposes envisaged in the program, there was a natural decrease observed in FC deposits. Notably, the depreciation in the exchange rate observed from May 2018 has increased the value in MXN of FC deposits, thus preventing a more pronounced decline in the rate of growth of their value in MXN. In 2018, FC deposits therefore accounted for an average of 0.8 pp in the 4.8 pp of growth in traditional deposits, 1.5 pp less than the average contribution recorded in 2017 (Figure 2b.6).

Figure 2b.5 Traditional deposits in foreign currency (real annual variation, 6MMA, %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.6 Contribution to the average growth of traditional deposits by type of currency (pp)



Source: BBVA Research based on data from Banco de México and INEGI

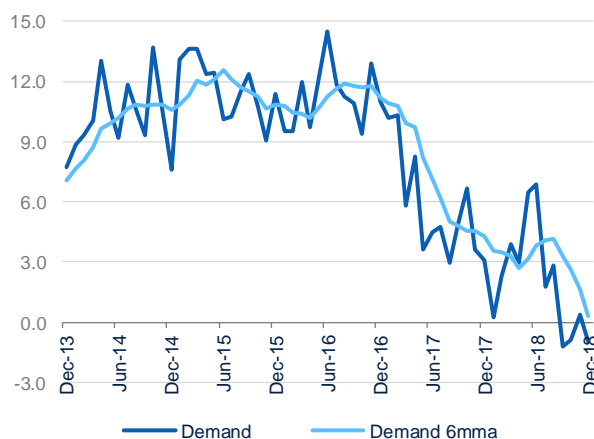
1: On January 18, 2017, the DOF (Diario Oficial de la Federación – Official Gazette of the Mexican Federation) published the "Decree granting various administrative powers in relation to income tax (ISR) in connection with deposits or investments received in Mexico," whereby individuals and legal entities residing in Mexico or abroad with a permanent establishment in the country that had obtained income from direct and indirect investments held abroad could repatriate capital to regularize their tax position, if they returned the funds to the country by July 19, 2017. Subsequently, on July 17, the deadline was extended to October 19, 2017.

## 2b.2 Buoyancy of sight deposits impacted by the slow recovery of household and business income

In December 2018, sight deposits (60.7% of traditional deposits) recorded a real annual contraction of -0.9% (3.9% nominal growth), lower than the 3.1% real growth rate recorded during the same month in 2017. As a result, in 2018 demand deposits averaged a real annual rate of 2.1% (7.1% nominal growth), less than half the average real rate observed in 2017 (5.7%). In spite of the acceleration in the rate of expansion of demand deposits in May, June and August 2018 (months that recorded real growth rates of 6.5%, 6.9% and 6.3%, respectively), the inflation hike recorded from May seems to have put the brakes on a strong expansion of sales and consumption which would promote greater use of these instruments for transactional purposes (Figure 2b.7). Furthermore, the rise in interest rates on long-term deposits increased the opportunity cost of holding liquid resources, making it less attractive to hold funds in demand deposits.

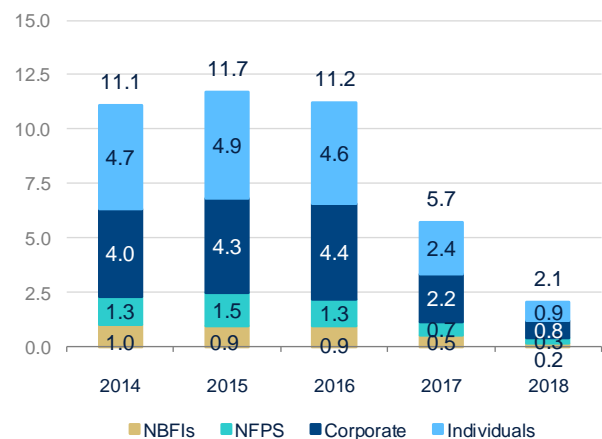
In 2018, the buoyancy observed in sight deposits was underpinned by the growth in individual and corporate balances, which contributed 0.9 and 0.8 pp, respectively, to the rate of average real growth, whereas demand deposits from other financial intermediaries (OFIs) and from the non-financial public sector (NFPS) had lower contributions of 0.2 pp and 0.3 pp, respectively (Figure 2b.8).

Figure 2b.7 Sight deposits. (Real annual variation, %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.8 Contribution of sight deposits to average growth (pp)



Source: BBVA Research based on data from Banco de México and INEGI

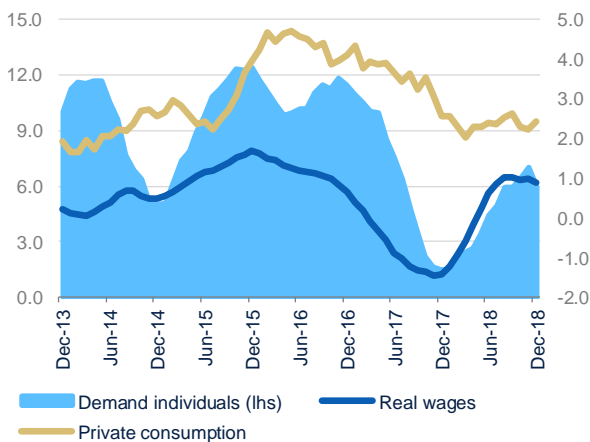
### Household and business income guides the performance of sight deposits

Sight deposits from individuals (42.0% of total sight deposits) reached a real annual variation of 2.8% in December 2018 (nominal figure of 7.7%), lower than the 3.2% real growth rate observed in the same month of 2017. As a result of the last month in the year, these deposits averaged a real annual rate of 5.2% in 2018, 0.7 pp higher than the 4.5% real average rate observed in 2017. The greater buoyancy of demand deposits partially reflected the moderate recovery in household purchasing power. From February 2018, real wages slowed down the contraction observed for 13 months running, caused by higher inflation. Between February and December, real wages averaged a growth rate of 0.9%. However, the inflation hike in the second half of the year restricted the possibility of a stronger recovery in this source of household income (Figure 2b.9).

Remittances were another source of household income that helped to restore purchasing power. The average growth rate recorded for remittance flows in USD in December was 10.5%, lower than the 12.3% average recorded in 2017. However, the exchange rate depreciation led to a better performance of remittance flows in MXN. These remittance flows recorded an average real annual growth of 8.1% in 2018, higher than the 6.5% average rate observed in 2017 (Figure 2b.10).

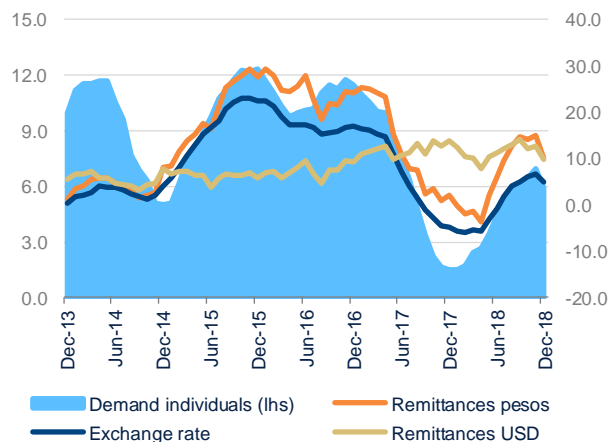
Although a rebound of these two sources of income for households (wages and remittances) would have restored some of the purchasing power to households private consumption moderated its dynamism, as shown by the indicator for private consumption in the internal market. Between January and November 2018 (latest available information) this indicator recorded an average growth rate of 2.4%, down from the 3.3% recorded for the same period in 2017 (Figure 2b.9). In addition, the increase in the rates of interest for term deposits would have encouraged more savings, also making it more costly for households to maintain liquid balances for transaction purposes, thus restricting greater dynamism in their demand deposits.

Figure 2b.9 Demand deposits by individuals, real wages and private consumption. (Real annual var., 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.10 Demand deposits by individuals, remittances and exchange rate (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

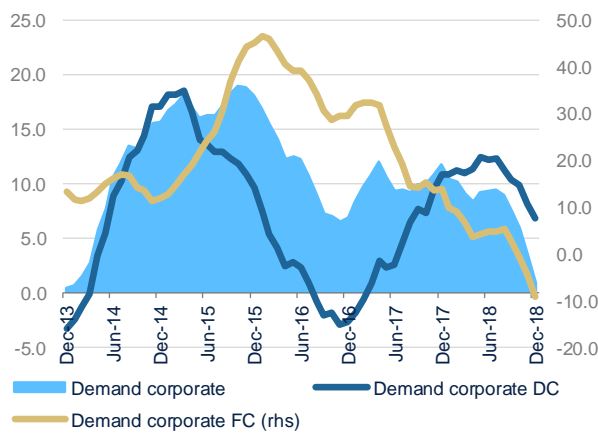
In December 2018, demand deposits by companies (41.3% of the total demand deposits) recorded a real annual variation of -2.8% (0.8% nominal), accumulating four consecutive months of contractions after not having registered falls since December 2013. With this result, real growth in companies' demand deposits averaged a real growth rate of 5.1% in 2018, less than half the average real rate of 10.6% achieved in 2017.

The slowdown in dynamism observed in companies' demand deposits is explained mainly by the slower growth rate of deposits in FC (35% of the companies' demand deposits). These deposits recorded an average real variation of -2.1% in 2018, far below the real growth rate of 18.4% observed in 2017. This slowdown mainly reflected a base effect associated with the capital repatriation program that was in force in 2017 (Figure 2b.11). However, companies' demand deposits in national currency (NC) improved their performance, recording a real annual growth rate of 9.5%, higher than the rate of 6.7% achieved in 2017. This greater dynamism of companies' demand deposits in NC would be linked to the performance of economic activity. Between January and November 2018, the Global Economic Activity INDEX (IGAE) averaged an annual variation of 2.1%, slightly higher than the 1.9% recorded for the same period in 2017. In addition, some income indicators for companies also showed a greater dynamism, as is the case for overall sales in

ANTAD (National Association of Supermarkets and Department Stores), which grew at an average real rate of 3.6% in 2018, higher than the real rate of 1.6% recorded the previous year (Figure 2b.12).

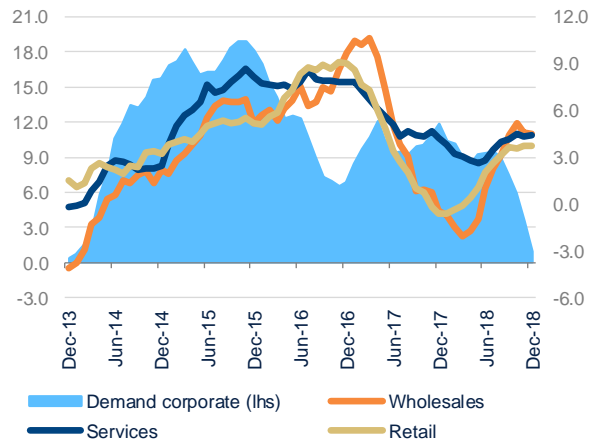
In December 2018, the demand deposit balance for the non-financial public sector (NFPS, 10.4% of total demand deposits) recorded a real annual variation of -9.9 (-5.6% nominal), significantly lower than the real growth rate of 2.3% reached in the same month of the previous year. With this result, demand deposits in this segment accumulated nine consecutive months of contraction in real terms. As a result, the average real variation in 2018 was -6.9%, below the average real growth of 6.5% in 2017.

Figure 2b.11 Companies' demand deposits by currency (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

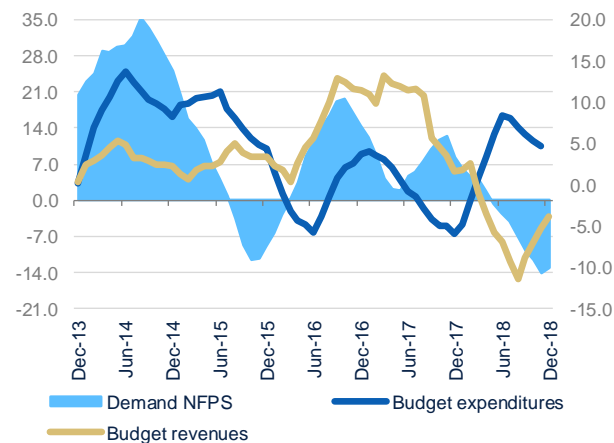
Figure 2b.12 Companies' demand deposits and income indices (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

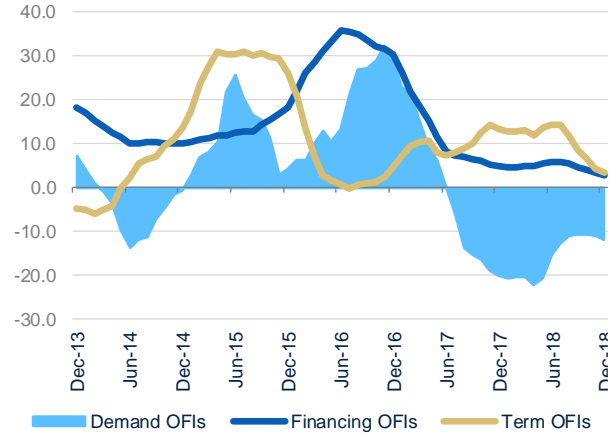
For the last two years, the performance of the balance of NFPS demand deposits has reflected the dynamism of both budget revenues and programmable spending in the public sector. Therefore, from mid-2016, the increase in budget revenues and the fiscal consolidation effort, which was reflected in a slower growth rate for programmable spending, enabled an accumulation of NFPS funds in demand deposits until the end of 2017. Over the course of 2018, the decline in the income expansion rate, coupled with more dynamic public spending, has been reflected in a reduction in the balances of demand deposits in NFPS (Figure 2b.13).

Figure 2b.13 NFPS demand deposits, budget revenues and programmable spending (Real annual var., 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.14 OFI and IGAE demand deposits (Real annual variation, 6MMA,%)



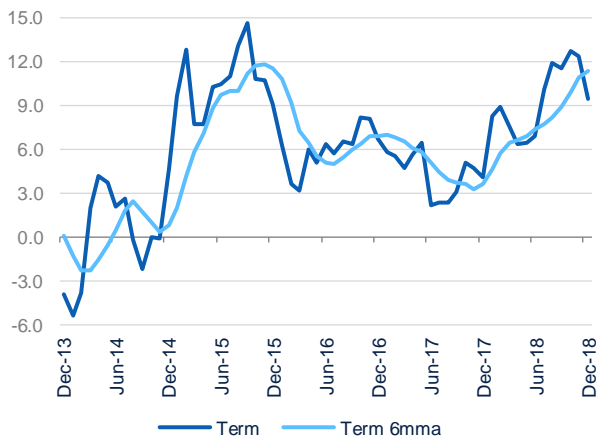
Source: BBVA Research based on data from Banco de México and INEGI

Lastly, demand deposits from other financial intermediaries (OFIs, 6.3% of total demand deposits) recorded real annual growth of 0.3% in December 2018 (nominal 5.1%), higher than the real contraction of -27.6% recorded in the same month of 2017. Despite the result obtained in the last month of the year, the average real variation in 2018 was -13.6%, greater than the average slowdown reported in 2017 of -9.8%. The lack of dynamism in these types of deposit may have been related to a lower demand for intermediary services from these institutions. The above, coupled with the improved yields on other instruments, favored the reallocation of these intermediaries' funds to term deposits, as detailed below (Figure 2b.14).

### 2b.3 Higher interest rates favor the performance of term deposits

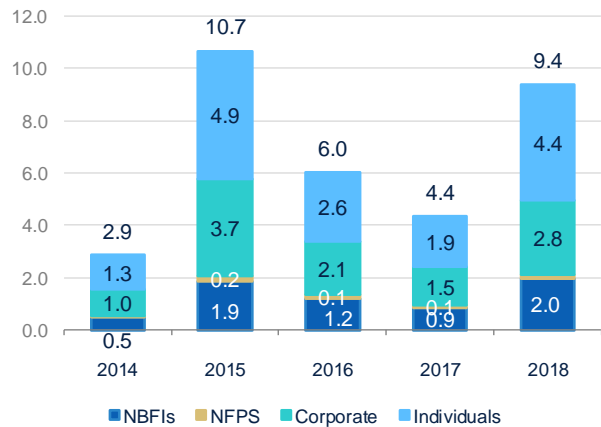
In December 2018, the balance of term deposits (39.3% of traditional bank deposits) registered a real annual growth rate of 9.5% (nominal 14.8%), more than double the real rate recorded at the close of the previous year (when it was 4.1%). With this result, in 2018 term deposits averaged a real annual rate of 9.4%, 5.0 pp above the average dynamism observed in 2017 (4.4%). The expansion rate of term deposits maintained an upward trend and even reached growth rates in double digits over five consecutive months (June to November, Figure 2b.15). In 2018, the growth observed in term deposits was supported by the dynamism of its four segments: individuals contributed 4.4 pp to the average growth rate in real terms, companies contributed 2.8 pp, OIFs 2.0 pp and NFPS 0.2 pp (Figure 2b.16).

Figure 2b.15 Term deposits.  
(real annual variation, 6MMA %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.16 Contribution to the average real growth rate of term deposits (pp)



Source: BBVA Research based on data from Banco de México and INEGI

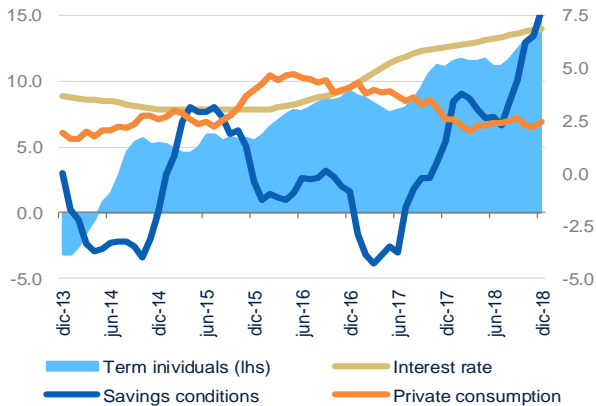
### Term deposits by individuals respond to the increase in interest rates, while those by companies acquire dynamism as an alternative protection against foreign exchange risk

In December 2018, term deposits by individuals (48.4% of total term deposits) reached real annual growth of 14.4% (nominal 20.0%), 4.7 pp higher than the 9.7% observed in the same month of 2017. Over the course of 2018, term deposits by individuals achieved double-digit growth rates in eleven of the twelve months of the year, being the most dynamic segment within traditional deposits. On average, in 2018, term deposits grew at a real annual rate of 13.1%, higher than the average real rate of 9.4% observed in 2017.

On the one hand, the dynamism of this segment was the result of the increase in interest rates paid on this type of deposit, which increased by 80 base points (bp) between December 2017 and December 2018, and made this type of saving more attractive. However, this increase in interest rates was lower than that observed the previous year (140 bp between Dec-16 and Dec-17), that year saw a drop in household income (fall in average real wages of 1.2% in 2017) which limited households' response to the offer of a higher yield. During 2018, the moderate expansion in private consumption<sup>2</sup> reflected households' greater willingness to devote a greater proportion of resources to longer-term savings instruments. This greater willingness to save was reflected in one of the indicators complementary to the consumer confidence index published by INEGI. Specifically, the index associated with the question: "How do you see your financial circumstances for saving in 12 months' time, compared to your current circumstances?" saw a growing trend appear mid-2017, indicating households' intention of saving did materialize during 2018 (Figure 2b.17).

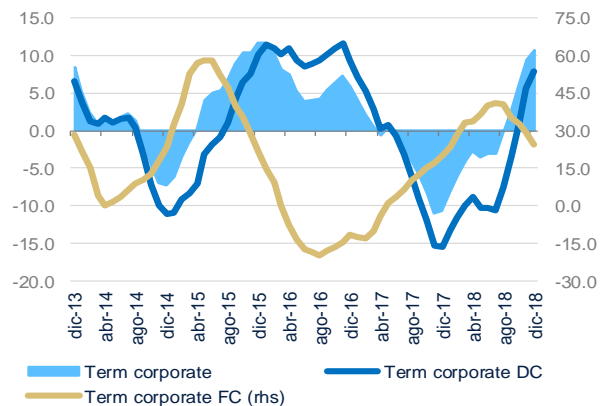
2: The monthly indicator for private consumption in the internal market recorded an average growth of 2.4% between January and November 2018, below the average growth rate of 3.3% observed in the same period the previous year.

Figure 2b.17 Individuals' term deposits, interest rate and supplementary savings index. (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.18 Companies' term deposits, by currency (Real annual variation, 6MMA,%)

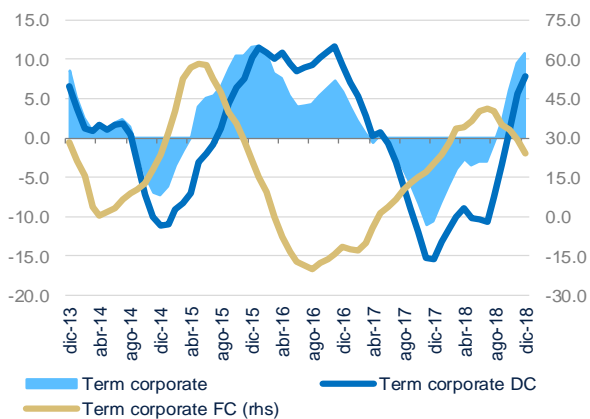


Source: BBVA Research based on data from Banco de México and INEGI

In December 2018, companies' term deposits (29.0% of total term deposits) reached a real annual variation of 5.0% (nominal 10.1%), reversing the -5.4% real contraction recorded in the same month of the previous year. In fact, in 2018, companies' term deposits successfully halted the trend of contraction recorded over 13 months beginning in December 2016. With the result achieved in December 2018, companies' term deposits grew on average at a real annual rate of 3.9% over the course of the year, 9.3 pp above the real contraction of -5.4% averaged in 2017.

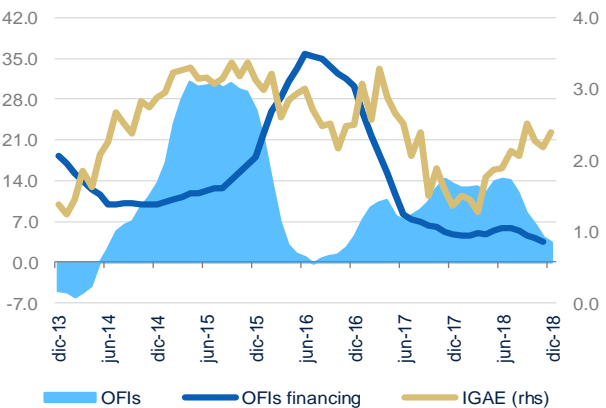
The dynamism of companies' term deposits was largely driven by growth in deposits in FC, which from September 2017 began to record consistent double-digit growth rates in real terms. For 2018, the balance of these deposits grew at an average real rate of 32.2% in its valuation in MXN (36.1% if valued in USD). This increase may partly reflect a redistribution of balances between currencies, because term deposits in national currency continued to fall in 2018, averaging a real contraction of -1.8%. The main source of the dynamism of companies' deposits in FC could have a precautionary origin, because by increasing the credit contracted in FC, the companies would be accumulating balances in the same currency in order to service that debt in the future, minimizing its exchange rate risk (Figure 2b.18).

Figure 2b.19 Companies' term deposits and credit in FC (Variation % annual, 6MMA)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.20 OFI term deposits, financing granted and IGAE (Variation % annual, 6MMA)



Source: BBVA Research based on data from Banco de México and INEGI.

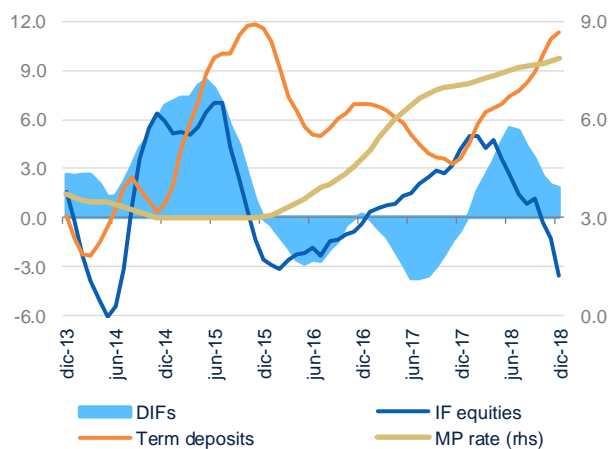
In the case of OIFs term deposits (20.6% of total term deposits) in December 2018 these showed real annual growth of 3.6% (8.6% nominal) lower than the dynamism of 6.2% recorded for the same month in 2017. The growth observed over ten months of the year managed to cushion the effects of the contraction in August and September. On average for 2018 the real growth rate reached 8.2%, lower than the average real rate of 10.4% reported in 2017 (Figure 2b.20). The performance of these agents' term deposits could be linked to demand for their intermediation services, which in turn responds to the performance of general economic activity. Thus, when these intermediaries grant a greater amount of financing, there is a decumulation of funds (preserved in term deposits) to maintain dynamism in the credit granted. Accordingly, the moderate performance of economic activity observed since Q317 would have been reflected in a lower demand for financing from these intermediaries. This would have allowed them to conserve the available resources in term instruments, explaining the recovery observed during the first half of 2018.

Finally, in December 2018 the balance of term deposits of NFPS (2.1% of the total term deposits) recorded a real annual variation of 18.8% (24.5% nominal), higher than that observed in the same month of the previous year (when real growth of 6.6% was recorded). For the 2018 period, NFPS term deposits recorded a growth rate of 118.1%, a result biased upward by growth outliers observed in June and July 2018 (who reported actual rates of 1.224% and 142.6% respectively). It should be noted that, due to the low amount of NFPS term deposits, small movements in balances are reflected in higher and more volatile growth rates, showing the effect of a reduced basis for comparison. Not counting the two outliers mentioned above, the average for the ten remaining months of 2018 was significantly more moderate, 5.0% in real terms, dynamism more in line with the 6.0% reported in 2017.

### 2b.4 Debt Investment Funds (DIFs) recover dynamism

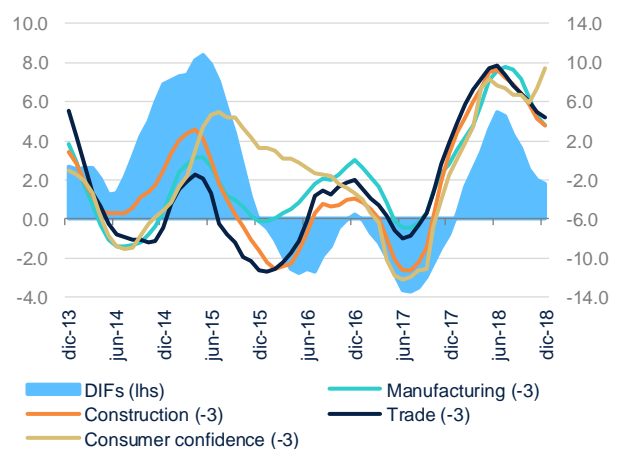
At the close of December 2018, the real annual growth rate of the share balance of debt investment funds (DIFs) was 3.8% (8.9% nominal), greater than the contraction of 0.5% recorded at the close of 2017. Despite the fact that the dynamism of this financial savings alternative slowed from June, its real rate of growth averaged 3.6%, reversing the contractions recorded in the previous two years (-1.2 in 2016 and -2.2 in 2017). In those years, other savings alternatives such as term deposits or variable income investment funds proved to be relatively more attractive to investors (Figure 2b.21).

Figure 2b.21 DIFs, term deposits, variable income investment funds and monetary policy rate (Real annual variation %, 6MMA)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.22 DIFs and business and consumer confidence indices (trailing three periods, -3) (Real annual variation %, 6MMA)



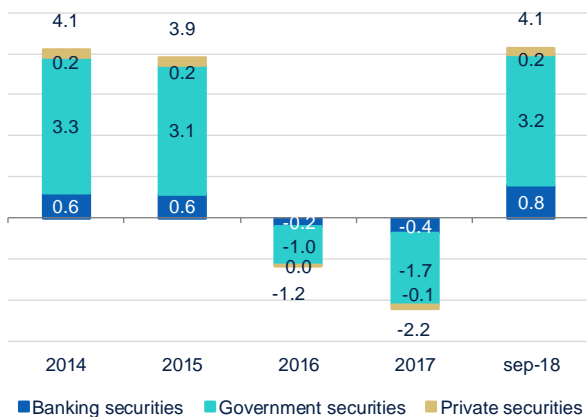
Source: BBVA Research based on data from Banco de México and INEGI



The contraction of the DIFs coincided with the abovementioned period for upward adjustment in interest rates, which would have adversely affected the price valuation of the instruments that make up these funds, together with episodes of volatility in the financial markets and uncertainty about the performance of the economy (reflected to some extent in indicators such as the business and consumer confidence index), signals that made this type of instrument a less attractive investment in relative terms. In 2018, there was a more moderate increase in benchmark interest rates (for example, the monetary policy interest rate increased by 100 basis points (bp) in 2018, less than the increase of 150 bp in 2017 and 250 bp in 2016, Figure 2b.21). A perception of a more stable economic environment may also have contributed to the recovery of the dynamism of DIFs during the first half of the year. From then on, the expectation of further increases in the interest rate and less optimism about the performance of the economy again seem to have contributed to slowing down growth recovery in this type of instrument. (Figure 2b.22)

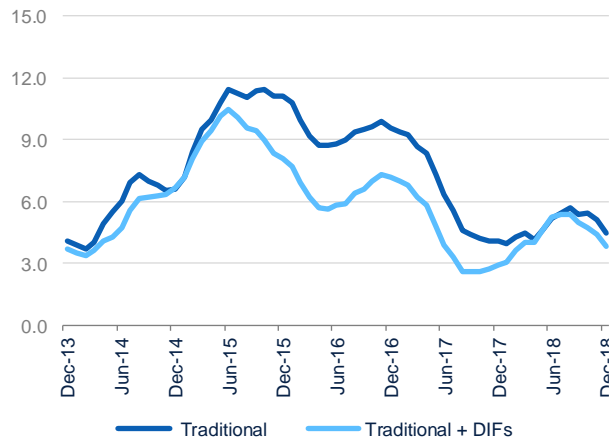
Based on the information available at September 2018, as in previous years, the instruments that contributed most to DIFs performance were government securities (74% of the total), which contributed 3.1 pp of the average real growth rate of 4.1% (Jan-Sept 2018). Bank securities provided 0.8 pp to this rate and other private securities contributed 0.2 pp (Figure 2b.23).

Figure 2b.23 Contribution to the average growth rate of DIFs (pp)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.24 Traditional bank deposits and DIFs (Real annual variation %, 6MMA)



Source: BBVA Research based on data from Banco de México and INEGI

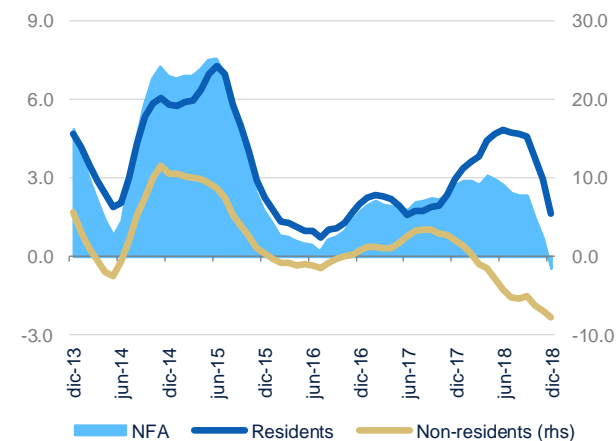
The aggregate of total deposits, which includes the balance of demand deposits, term deposits and shares in DIFs, takes into account the evolution of the various savings alternatives offered by banks as a whole, regardless of the degree of substitution that exists between their components. At December 2018, this aggregate of financial savings instruments expanded at an annual rate of 3.1% (8.1% nominal), higher than the rate of 2.4% recorded in December 2017. Thus, in 2018 this indicator averaged real annual growth of 4.5%, 1.1 pp higher than the average of 3.4% in real terms observed in 2017 (Figure 2b.24). By component, term deposits drove most of this dynamism, contributing 2.7 pp on average to the growth rate, whereas demand deposits contributed 1.0 pp and shares in DIFs contributed 0.8 pp.

## 2b.5 The dynamism of Net Financial Assets (NFA) was supported by residents' voluntary savings

As a result of the updates to the monetary aggregates methodology made by Banco de México in January 2018, new indicators began to be published to account for the financial wealth of the holders of money and other financial instruments. These indicators are called Domestic Financial Assets (F) and combine instruments that came out of the above definitions of monetary aggregates (1999 methodology) with others that serve as savings and investment instruments available in the Mexican financial system<sup>3</sup>.

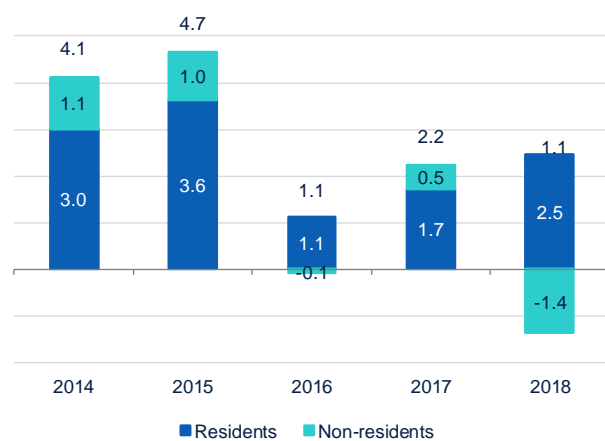
In this section, we present an analysis of these assets, net of banknotes and coins (Net Financial Assets, FN). These indicators include, in the case of residents in the country: monetary instruments (demand deposits, term deposits, shares in DIFs, payables under repurchase agreements and public securities issued by the federal government, IPAB (Instituto de Protección al Ahorro Bancario - Institute for the Protection of Bank Savings) and Banco de México). This also covers non-monetary (less liquid) instruments like saving funds for housing and retirement (mandatory savings), other public securities and bank liabilities, as well as variable-yield securities and hybrid instruments. For non-residents in the country, possession of the same instruments is considered as in the case of residents, with the exception of mandatory saving funds for housing and retirement.

Figure 2b.25 NFA by type of holder (Real annual variation, % 6MMA,)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.26 Average real growth contribution of NFA (percentage points, pp)



Source: BBVA Research based on data from Banco de México and INEGI

In December 2018, NFA registered a real annual variation of -4.4% (0.3% nominal), less than the 3.9% growth registered in the same month the previous year. With this result, in 2018 the real rate of AFN growth averaged 1.1%, half the average recorded in 2017 of 2.2% (Figure 2b.25). The dynamism of AFN was driven primarily by the performance of residents' savings, as non-residents' savings showed a clear slowdown from February 2018, accumulating eleven continuous months of contraction by the close of the year. In particular, the NFA of residents contributed 2.5 pp to the real rate of NFA growth, the highest contribution recorded in the past three years. However,

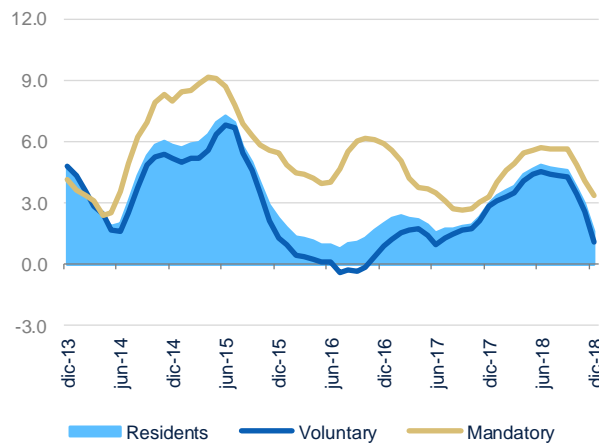
3: For a detailed description of the change in methodology, see our "Monetary Aggregates and Domestic Financial Assets Observatory: statistics relating to savings and financial investment," available at: [https://www.bbvarresearch.com/wp-content/uploads/2018/04/180419\\_AgregadosMonetarios.pdf](https://www.bbvarresearch.com/wp-content/uploads/2018/04/180419_AgregadosMonetarios.pdf)

the contraction observed in the dynamism of the NFA held by non-residents took away 1.4 pp from the dynamism of the NFA totals (Figure 2b.26).

Residents' savings (79% of all AFN) recorded a real annual variation of -2.4% (2.3% nominal) in December 2018, the first contraction observed for this savings aggregate since February 2016. In spite of the profit for the last month of the year, for 2018, AFN held by residents achieved an average real growth rate of 3.2% (8.3% nominal), higher than the average rate of 2.2% in real terms observed in 2017. Both voluntary savings and mandatory savings helped to boost the growth observed over the course of the year. Voluntary savings (60% of total NFA) in 2018, averaged a real growth rate of 2.8%, higher than the rate of 1.9% averaged in 2017. This result enabled it to contribute 2.1 pp to the growth in residents' NFA. Within voluntary savings, the instruments that contributed most to the dynamism were: total deposits (which includes demand deposits, term deposits and DIFs) and variable yield instruments (Figure 2b.27).

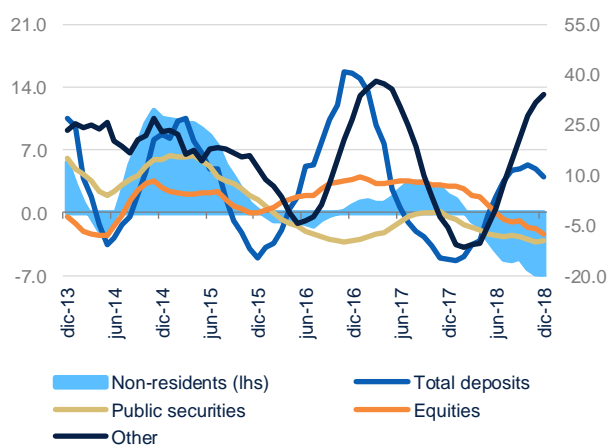
Mandatory savings (which includes saving funds for housing and retirement and represents 19% of total NFA) improved its performance on the previous year (its average real growth rate in 2018 was 4.5%, higher than the average growth rate recorded in 2007, 3.4% in real terms). As a result of this recovery, they contributed 1.1 pp of the 3.2% growth rate of the NFA held by residents.

Figure 2b.27 NFA held by residents (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 2b.28 NFA held by non-residents (Real annual variation, 6MMA,%)



Source: BBVA Research based on data from Banco de México and INEGI

NFA by non-residents (21% of the total NFA) recorded a real annual variation of -11.2% (-7.0% nominal) in December 2018, accumulating eleven consecutive months of contraction. In 2018, the NFA of non-residents averaged a real contraction of -5.9%, below the average real growth rate of 2.2% in 2017. The unfavorable performance of the non-residents' NFA is mainly due to the reduction observed in the value of holdings of public securities and equity instruments, which together represent 95% of non-residents' NFA. In particular, public securities contributed -3.8 pp, while equity instruments contributed 2.5 pp additional reduction to the contraction of -5.9% in the NFA of non-residents. Although traditional deposits and other financial savings instruments held by non-residents accelerated its dynamism, their low participation in the non-residents portfolio (only 5% of the total) prevented their performance from modifying the balance and only managed to cushion the drop by 0.3 pp (Figure 2b.28). It should be noted that the contraction in equity was due to a valuation effect associated with the drop in CPI, whereas the decrease in the holdings of public securities was recorded in short-term instruments, as a result of the normalization of the US monetary policy.

## **2b.6 Recovery of the dynamism of savings will depend on the strengthening of economic activity as well as household and business income**

In 2018, the various aggregates that measure the performance of savings in the economy (traditional deposits, total deposits and net financial assets) showed moderate recovery compared to the results of the previous year. Factors behind this recovery in performance include the increase in interest rates of long-term instruments and the gradual recovery of business and household income. However, despite the improvement observed in the first half of the year, performance in the second half weakened, reflecting the slowing pace of economic activity and the surge in inflation.

Although the greater relative attractiveness of long-term instruments has helped to sustain the performance of the various savings aggregates, other performance drivers, such as the growth of economic activity and the recovery of household income, show weak signals of recovery. This, coupled with greater uncertainty associated with the future performance of the economy may limit any increase in the dynamism of savings in the future and, in turn, narrow domestic sources of financing.

## 3. Special topics

### 3.a Consumer Credit: recent developments and analysis of the slowdown in its growth rate

#### 3a.1 Introduction

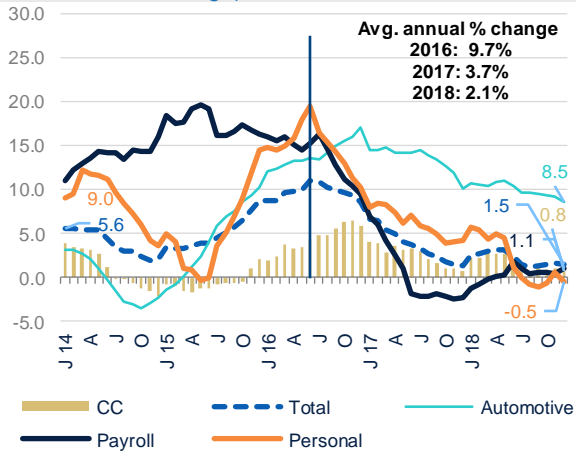
The current consumer loans portfolio granted by commercial banks has shown a significant slowdown in its growth rate since July 2016. There are several factors behind this behavior. One of them is the contraction of the average salary of workers registered with the Mexican Social Security Institute (IMSS), which fell 1.1% in real terms from 2016 to 2017. While the average annual growth of this wage grew by 0.8% in 2018, it was still 0.4% lower than in 2016 in real terms. Another variable that affected the dynamism of consumer credit is the fact that the growth rate for the creation of new jobs associated with growth in economic activity has also decreased. The last point can be shown with the new indicator that the INEGI began to publish in September 2018, called the global personnel employment index for economic sectors (Índice Global del Personal Ocupado de los Sectores Económicos, IGPOSE). For example, the average annual growth rate of IGPOSE from January to November 2017 was 2.7%, and this was reduced to 2.1% during the same period in 2018. Another factor that has influenced the slowdown in the growth of consumer credit is the increase in delinquency rates and adjusted delinquency rate. In addition, quarterly surveys published by Banco de México on general conditions and standards in the consumer credit banking market indicate that their applicants and lenders have behaved with caution when requesting and granting new loans.

As long as the future evolution of the above-mentioned factors does not improve their performance, leading to better economic prospects for current and potential customers, consumer credit will not receive a positive boost reflected in a substantial increase in its real annual growth rate.

#### 3a.2 Recent developments in total consumer credit and its segments

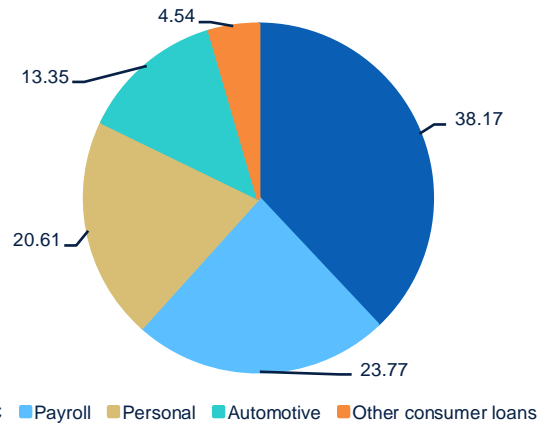
The last time the real annual growth rate of the current total consumer credit portfolio increased to double-digit rates was in August 2016, when it reached 10.3%. From September of that year this credit began to grow at real single-digit rates and its expansion rate slowed markedly. Thus, the real annual growth rate of consumer credit was 8.5% in December 2016, it then fell to 1.3% at the end of 2017 and in December 2018 was 1.5% (Figure 3.a.1). Likewise, a comparison of the real average annual growth rate of the total consumer credit from January to December 2017 (3.7%) with the same period for 2018 (2.1%) indicates that the slowdown of this credit sharpened in this last period, particularly in the second half of the year.

Figure 3a.1 Consumer Credit: total and by component (Real annual % change)



Source: BBVA Research based on data from Banco de México

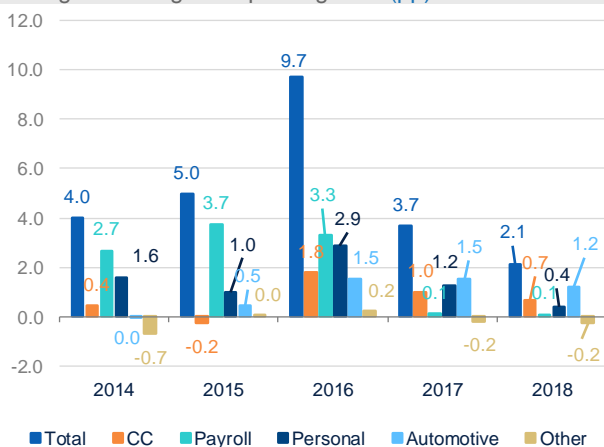
Figure 3a.2 Consumer Credit: percentage structure in December 2018 (%)



Source: BBVA Research based on data from Banco de México

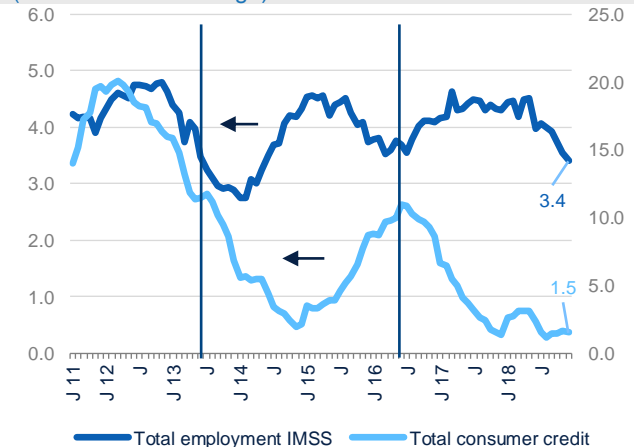
It should be noted that the only one of the five segments of consumer credit that maintained double-digit real annual growth rates to June 2018 was credit granted for car purchases (automotive loans). In July and December 2018 its growth was 9.7% and 8.5% respectively. In addition, the growth rate of automotive loans contrasts with the other total consumer credit components. In the last month of 2018, the real annual growth rates of the other consumer credit components were: credit cards, 0.8%; payroll, 1.1%; personal, -0.5; other segments, -0.4%. Similarly, in December 2018 the relative share of the consumer credit segments in the total was as follows: Credit cards is the most important segment and its participation represents 38.2% of the total consumer credit; payroll loans, 23.8%; personal loans, 20.6%; automotive loans, 13.3%; other segments, 4.5%. In other words, the most important consumer credit segments are credit cards, payroll, personal and automotive loans, and together represent 95.5% of the total consumer credit portfolio (Figure 2).

Figure 3a.3 Consumer Credit: Contribution to real average annual growth per segment (pp)



Source: BBVA Research based on data from Banco de México

Figure 3a.4 Total IMSS employment and consumer credit (Real annual % change)



Source: BBVA Research based on data from Banco de México

The relative importance and dynamism of each consumer credit segment was reflected in its components' contribution to total consumer credit growth. From 2014 to 2016 payroll loans was the segment that contributed the most to the average annual growth rate of total consumer credit (Figure 3.a.3). This later changed, and in 2017 and 2018 automotive credit was the component that registered the largest contribution to total consumer credit growth. During 2018, the contribution of automotive loans to total consumer credit as a share of average annual growth was 1.2 percentage points (pp) of the 2.1 pp total growth. This means that the remaining four consumer credit components contributed only 0.9 pp to the total average growth in that period. It should be noted that the growth rate of automotive loans has also slowed. For example, the real average annual growth rate of these loans was 13.6% in 2017 and 10.0% in 2018. If automotive loans continue to slow down, their contribution to total consumer credit will also decrease, and this is also likely to decrease the growth rate of total consumer credit in the near future.

### **3a.3 Interaction between the dynamism of consumer credit, IMSS formal employment and global personnel employment index (IGPOSE) of the INEGI**

The dynamism of the total consumer credit portfolio was positively associated with the behavior of formal employment, which is generally measured based on the employment of people working in private sector companies registered as active workers with the Mexican Social Security Institute (IMSS), particularly until June 2013. In July 2013, the relationship between the dynamism of consumer credit and the growth of IMSS formal employment changed (Figure 3.a.4). This intensified from the second half of 2016 when the growth rate of total consumer credit began to slow significantly while IMSS employment growth stayed level, and only started to slow down in the second half of 2018.

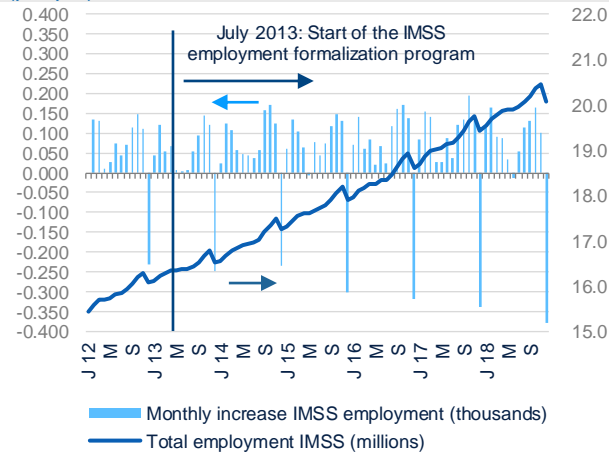
The decrease in significance of the direct association between consumer credit growth and IMSS formal employment can be explained by the fact that until June 2013 the annual growth rate of IMSS formal employment was a reliable indicator of the economic situation of the country. This changed in July of that year when the country's labor authorities introduced the Employment Formalization Program (PFE in Spanish).<sup>4</sup> The program was a response to the reduction in the monthly increase of IMSS formal employment at the end of the first half of 2013, which represented less than 3,000 people in June of that year (Figure 3a.5). This figure contrasted with the monthly average figure between 55,000 and 60,000 for IMSS new job creation that the economy had recorded in previous years.

To promote formal employment in the country, the employment authorities introduced the PFE, which registered with the IMSS workers who already had a job and, therefore, an income, but lacked social security. Accordingly, from the second half of 2013, data from the monthly increase in IMSS formal employment recorded both workers who had been formalized and workers whose formal employment was a product of the growth in economic activity.

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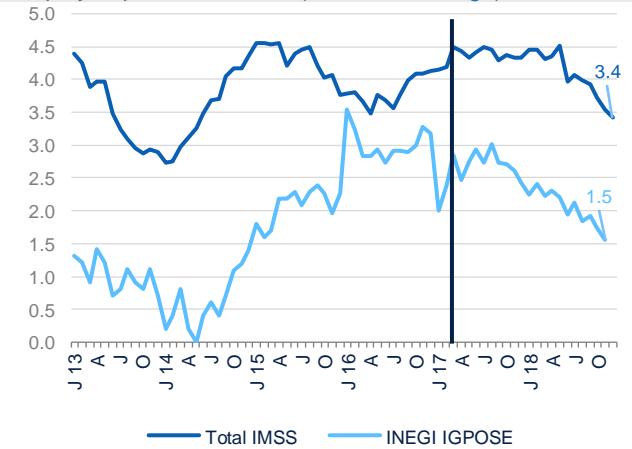
4: The "1st Jobs Report 2012-2013" from the STPS (Secretaría del Trabajo y Previsión Social – Ministry of Labor and Social Welfare), on the first page of the "Introduction" section, says: "Particularly relevant in this regard is the implementation of the Job Standardization Program, a mechanism for coordination between the STPS, the IMSS, and state and federal governments, which will carry out a series of actions to reduce informal work rates". In chapter IV, Employment and Tax collection, on p.111 of the "Jobs and Activities Program Report 2014-2015," the IMSS also refers to the Job Standardization Program, indicating that the process started in 2013 and has been key to the success of promoting membership of the IMSS among workers.

Figure 3a.5 IMSS formal employment (people)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 3a.6 IMSS formal employment and INEGI overall employed personnel index (Annual % change)



Source: BBVA Research based on INEGI data

The PFE allowed IMSS formal employment to continue to increase and register high growth rates (Figures 3a.5 and 3a.6). However, the PFE modified the original relevance of the IMSS formal employment data, as although the growth rate of IMSS formal employment has remained high since the second half of 2013, it has ceased to specifically reflect the net increase in the number of formal workers exclusively generated by the growth of the country's economic activity. Furthermore, since the second half of 2013, the more existing workers are formalized, the greater the annual growth rate of IMSS employment, which is an example of the distortion that this indicator has assumed as a result of the introduction of the PFE.

In September 2018, INEGI began to publish the Global personnel Employment Index for Economic Sectors (IGPOSE). This indicator provides information using a labor demand approach and shows the trends in employed personnel, as required by economic units to carry out their production processes. In other words, the IGPOSE refers to employment that is actively participating in productive activities. Any increase in this index reflects the generation of new employment, which in turn reflects an increase in employment demand, therefore it is more directly associated with the growth of economic activity.

Figure 3a.6 shows the annual growth rates of total IMSS employment and the IGPOSE from INEGI, and both refer to a different labor market dynamism. The annual growth rate of average IMSS formal employment from July to November 2018 was 3.8%, while the average rate of the IGPOSE for these months was lower, at 1.8%. Furthermore, in November (the latest data available) the annual growth rate of IGPOSE was 1.5% while the IMSS rate was 3.5%, more than double.

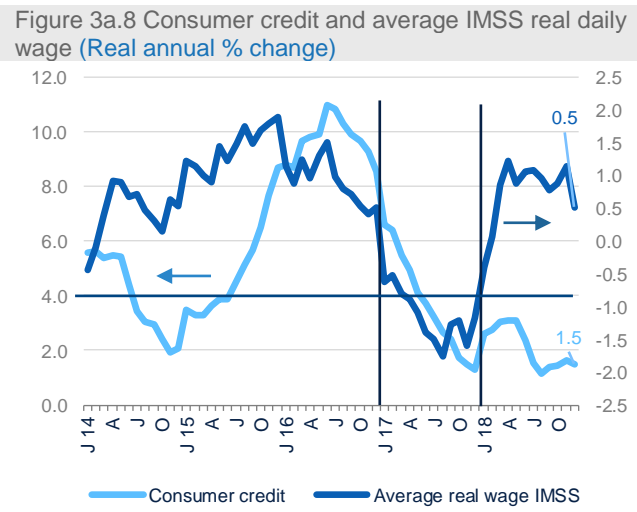
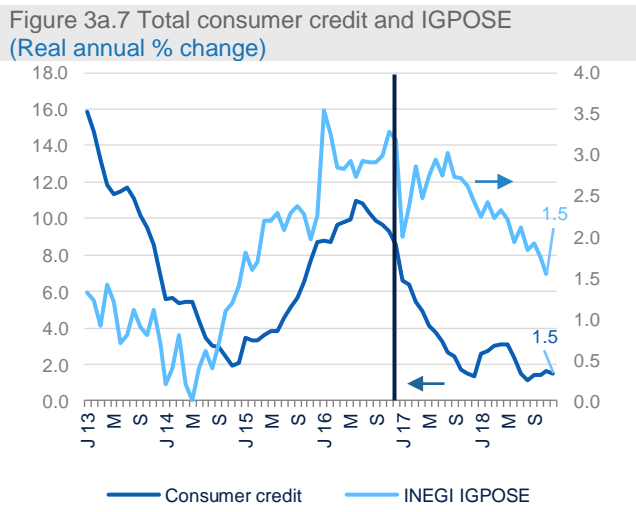
In addition, Figure 3a.7 indicates that there is a direct relationship between the growth of the INEGI index for personnel employed in productive activities (IGPOSE) and the real annual growth rate of consumer credit, with a lag of about six months. For the period from January 2014 to November 2018 these series have a positive correlation coefficient of 0.38, which increases to 0.60 for the period from January 2015 to November 2018.

The positive relationship between the growth of the IGPOSE and consumer credit suggests that the slowdown in the pace of growth of employment is also reflected in the slowdown of real annual growth in consumer credit, as has been



the case since mid 2016. In 2016, the average annual growth rate of the IGPOSE was 3%, in 2017 it dropped to 2.6%, and for the first eleven months of 2018 it was under 2%.

In addition, the correlation coefficient between the growth rate of the IGPOSE and the growth rate of consumer credit from January to November 2018 was greater, at 0.77, than for previous periods. This could indicate that the slowdown of consumer credit may be associated with the lower employment growth recorded by the IGPOSE since the last quarter of 2017 (Figure 3a.7).



### 3a.4 Evolution of real IMSS wages and its effect on consumer credit

The increase in the real wages of workers increases their real disposable income and, therefore, their payment capacity. This allows them to take out various types of credit, including consumer credit. In light of this, an important relationship can be expected between the behavior of the real average wages of workers registered with the IMSS and the consumer credit portfolio. The correlation coefficient between the real annual growth in real IMSS wages and the balance of the total consumer credit, with a lag of 3 and 6 months for the first variable, was positive from January 2013 to December 2018, at 0.52 and 0.65, respectively.

From March 2014 to December 2016 the real average wages of workers registered with the IMSS recorded positive annual growth rates. The average real annual growth rate for that period was 1%. The average real annual growth rate of current consumer credit for the same period was 6.3%. By contrast, from January 2017 to January 2018, average IMSS real wages contracted their monthly average to 1.1%, primarily due to the increase in inflation from January 2017. It should be noted that consumer credit showed a significant slowdown in its growth rate from that month onward, dropping from 6.6%, in real terms, in January 2017 to 1.3% in December of that year (Figure 3a.8). The average real annual growth rate was 3.6% in 2017, which was lower than the previous year. From February to December 2018, real IMSS wages registered positive growth rates once again, with an average of 0.9%. The average real annual growth rate of consumer credit during 2018 was 2.1%.

As shown by the previous data, the decline of real wages in 2017 may have contributed to weakening the consumer credit demand that year. However, the 2018 improvements in real wages were not reflected in a higher growth rate for consumer credit, possibly because the pace of growth of employment based on the overall employed personnel index for economic sectors (IGPOSE) slowed significantly (Figure 3a.7). Another reason is that average real IMSS wages fell 1.2% on average in 2017 and only increased 0.8% on average in 2018. In other words, although the level of average real IMSS wages started to rise in 2018, it was still 0.4% lower than in 2016. This means that the recovery of real wages in 2018 may not have been sufficient to offset the slower pace of employment, nor was it sufficient to drive consumer credit on its own.

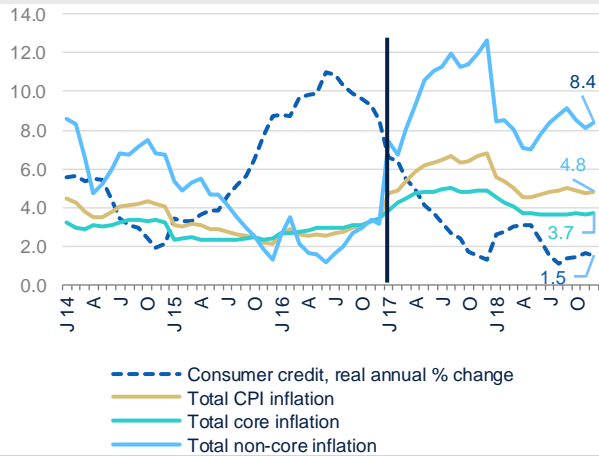
These points indicate that as long as the real average wages of workers registered with the IMSS do not record high growth rates that steadily increase workers' real income and payment capacity, it is difficult to imagine that consumer credit will recover the double-digit growth rates it had until the end of the first half of 2016.

### **3a.5 Other means through which inflation impacts on consumer credit**

Factors such as the contraction of the average real salary for workers registered with the IMSS and the reduced demand for personnel employed in productive sectors of the economy, as the IGPOSE indicates, are elements that weaken or reduce the demand for consumer credit. Inflation also weakens the demand for consumer credit through means that differ from the decline in real wages. This occurs to a greater extent with the inflation of goods which form part of the basket of underlying assets, including agricultural and energy goods. General inflation or inflation measured with the consumer price index (CPI) also have an adverse effect on the performance of consumer credit, but this effect may be less intense than that of the steadily increasing prices of agricultural and energy goods (Figure 3a.9).

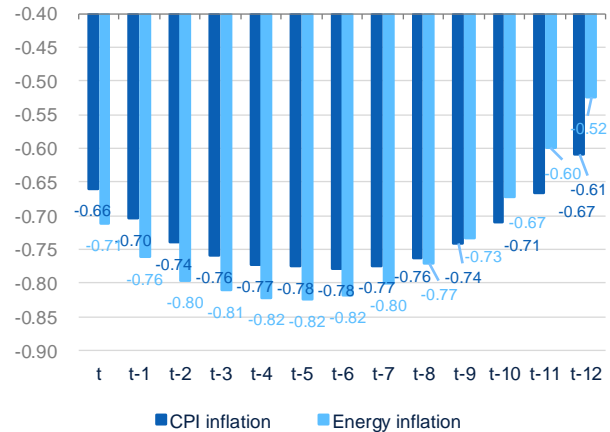
The correlation coefficient between the growth rate of the current consumer credit portfolio and the current month's year-on-year inflation rate as measured by the CPI is negative at -0.66. The correlation coefficient between the real annual growth rate of consumer credit and the energy price index remains negative and its absolute value increases to reach -0.71. These correlation coefficients remain negative and increase in absolute value when we consider the correlation between the growth rate of consumer credit for the current month and year-on-year inflation from the CPI or the energy index for previous months (Figure 3a.10).

Figure 3a.9 Delinquency rate for consumer credit and year-on-year inflation rate (Real annual % change and %)



Source: BBVA Research based on data from Banco de México and INEGI

Figure 3a.10 Correlation coefficient: Growth rate of consumer credit and CPI year-on-year inflation (current month and outdated up to 12 months from Jan 14 to Dec 18)



Source: BBVA Research based on data from Banco de México and INEGI

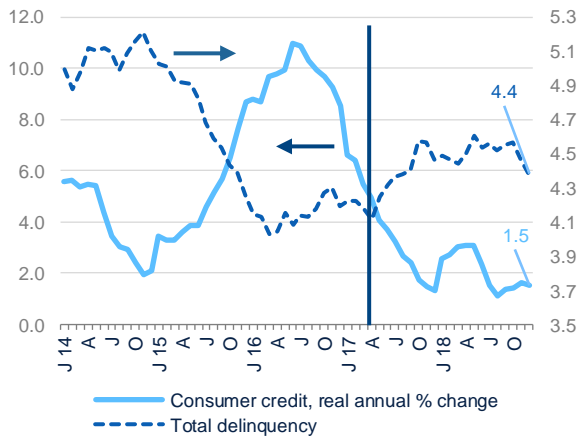
Inflation directly affects consumer credit by decreasing purchasing power and, therefore, payment capacity of the average base wage of people who work in the formal sector of the economy (workers registered with the IMSS). Inflation also affects consumer credit through other mechanisms and ultimately reduces the payment capacity of current and potential customers who do not work in the formal sector of the economy. It should be noted that there were almost 20.2 million formal workers registered with the IMSS in September 2018, while 33.4 million workers, accounting for 61.8% of the total number of working people, did not have social security on that date.

Workers who do not have social security are considered informal, and currently, cannot easily obtain consumer credit as a result of having no proof of income. However, if these informal workers contribute to household expenditure in a household that has taken out bank loans, inflation reduces real household income, which can inhibit new household loan acquisition (the growth rate of consumer credit is reduced). It can also increase late payment of existing loans if the decrease in real household income only allows priority spending, which may not include consumer credit payment.

### 3a.6 Interaction between the growth rate of consumer credit and delinquency rate

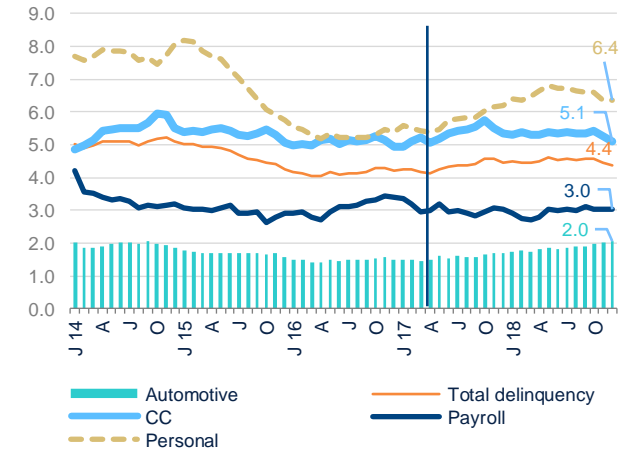
The slowdown in the growth rate of consumer credit also coincided with the increase of its delinquency rate. The delinquency rate is the ratio of the past-due loan portfolio to total loan portfolio (current portfolio + past-due portfolio). Any increase in this index reflects the deterioration of the quality of the credit portfolio over time. Thus, the increase in delinquency rate for consumer credit, like that of any other credit category, indicates that the risk of granting credit has increased. This point indicates that the increase in delinquency rate for the total consumer credit portfolio from April (4.1%) to May (4.2%) in 2017 may have been another factor in the slowdown of the growth rate for these types of credit from that date (Figure 3a.11). Between May 2017 and December 2018, the delinquency rate for consumer credit was 4.6% on five occasions, the last of which was in October 2018.

Figure 3a.11 Consumer credit: Delinquency rate and real annual growth rate (%)



Source: BBVA Research based on data from Banco de México

Figure 3a.12 Delinquency rate for consumer credit by component (%)



Source: BBVA Research based on data from Banco de México

In addition, there is an inverse relationship between the growth rate of consumer credit and its delinquency rate. The correlation coefficient that exists between the real annual growth rate of consumer credit and its delinquency rate from January 2014 to December 2018 is negative and stands at -0.54. This point may indicate that as the delinquency rate for this credit portfolio increases, lenders will show greater caution in granting credit, which may be reflected in the reduced growth rate of its balance.

The evolution of the delinquency rate for each consumer credit segment, from April 2017 to December 2018, was as follows (Figure 3.a.12): The delinquency rate for credit cards remained the same at 5.1% for both year-ends; automotive loans grew from 1.5% to 2.0%; payroll loans also stayed level at 3.0%; personal loans increased from 5.4% to 6.4%.

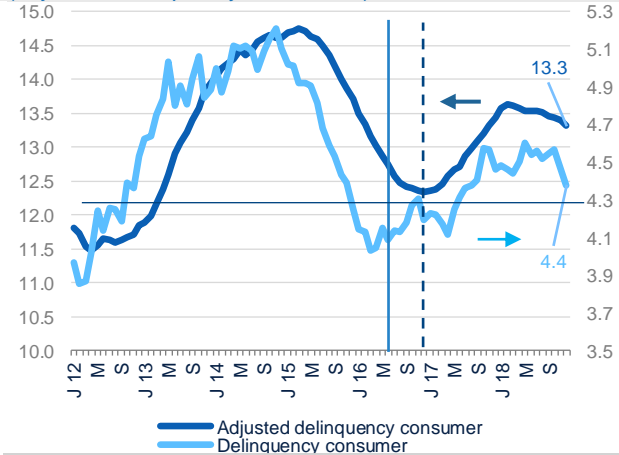
### 3a.7 Differences between delinquency rate and adjusted delinquency rate for consumer credit

Although the delinquency rate for consumer credit highlights the inverse relationship between the real growth of this credit portfolio and the deterioration of its quality, the inverse relationship between the deterioration of the credit portfolio and the growth of its balance becomes clearer when we consider the adjusted delinquency rate. The adjusted delinquency rate is the ratio between any type of twelve-month average past-due loan portfolio plus the write-downs and write-offs accumulated by this credit portfolio over 12 months. This figure is divided by the 12-month average total credit portfolio plus the write-downs and write-offs accumulated over 12 months.

Since the adjusted delinquency rate is calculated according to a 12-month period, it shows the deterioration of the credit portfolio over one year. For consumer credit, it appears that the level of the adjusted delinquency rate is higher than that of the delinquency rate. For example, in 2017 and 2018 the delinquency rate for consumer credit was 4.3% and 4.5% respectively. The average adjusted delinquency rate for consumer credit for these two years was 12.8% and 13.5% respectively. This data indicates that the adjusted delinquency rate is an indicator that shows greater deterioration than the delinquency rate. This can also be seen when we consider that the delinquency rate went from

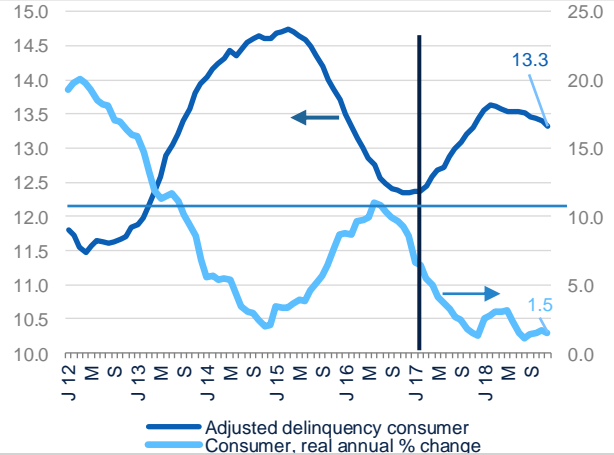
4.1% in April 2017, the month in which it registered its lowest level, before rising to 4.4% at the end of 2018. In contrast, the adjusted delinquency rate grew from 12.6% to 13.3% in the same period (Figure 3a.13).

Figure 3a.13 Consumer credit: Delinquency rate and Adjusted delinquency rate (adjusted delinquency rate and %)



Source: BBVA Research based on data from Banco de México and CNBV

Figure 3a.14 Consumer credit: adjusted delinquency rate annual growth (Real annual % and %)



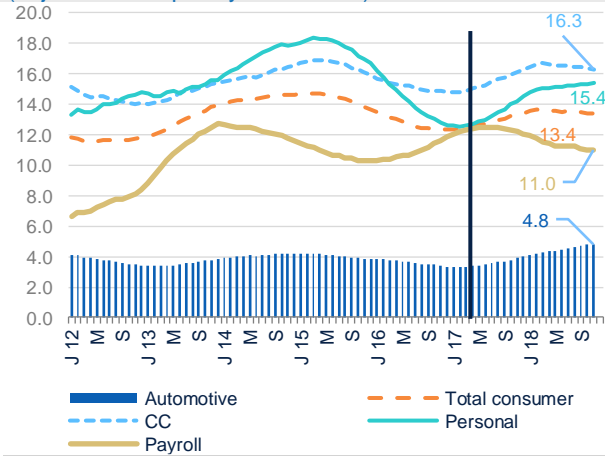
Source: BBVA Research based on data from Banco de México and CNBV

Both average and specific data show greater deterioration in the quality of the consumer credit portfolio with the adjusted delinquency rate than with the delinquency rate. The reason behind the difference in magnitude of the delinquency rate and adjusted delinquency rate is that the adjusted delinquency rate takes into account the amounts of write-downs and write-offs that commercial banks have to apply to unpaid credit each month, based on rules for the creation of credit risk reserves, which are aimed at cleaning up the unpaid credit portfolio. This means that the delinquency rate, as well as reflecting the deterioration of a credit portfolio, also gradually mitigates the losses that past-due loans cause to banking institutions. Thus, applying the reserves reduces the balance of the past-due loan portfolio. If current loans keep falling in the past-due portfolio, then credit risk reserves have to continue to be generated and applied through write-downs and write-offs, in order to clean up the credit portfolio.

If we look at the delinquency rate, it seems that the deterioration in the quality of the consumer credit portfolio occurred after August 2016 when this index was 4.1%, it then increased to 4.6% in May 2018 and declined slightly to end the year at 4.4%. On the other hand, the adjusted delinquency rate shows that the deterioration occurred after December 2016. Thus, this index went from 12.3% at the end of 2016 to 13.6% in January 2018, and remained at that level until April. In the following months of 2018, the adjusted delinquency rate for consumer credit dropped slightly and gradually to reach 13.3% in December 2018 (Figure 3a.13). It should be mentioned that, while both indicators show a deterioration in the quality of the consumer credit portfolio for the referred period, the delinquency rate does not reflect the same magnitude of deterioration as the adjusted delinquency rate.

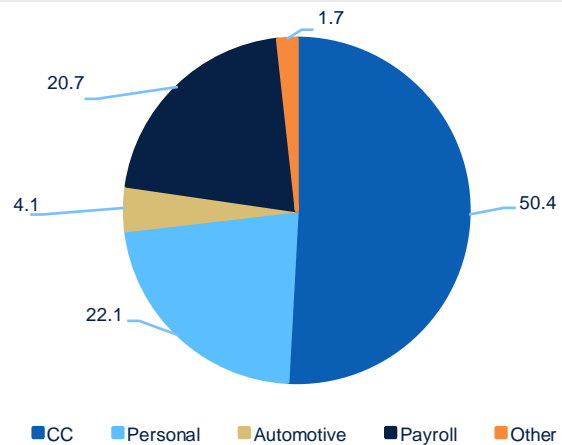
In addition, there is an inverse relationship between the adjusted delinquency rate and the real annual growth rate of the current consumer credit portfolio (Figure 3a.14). For example, from January 2005 to December 2018, the correlation coefficient between the adjusted delinquency rate for consumer credit and its real annual growth rate was 0.94. This shows that there is an inverse relationship between the deterioration of this credit portfolio and its rate of expansion. That is, the greater the rate of credit growth, the greater its adjusted delinquency rate. However, this correlation coefficient remains negative at -0.83 for the recent period from July 2016 to December 2018.

Figure 3a.15 Consumer credit: Delinquency rate and Adjusted delinquency rate (adjusted delinquency rate and %)



Source: BBVA Research based on data from Banco de México and CNBV

Figure 3a.16 Write-downs and write-offs of consumer credit: percentage structure (December 2018, %)



Source: BBVA Research based on data from the CNBV

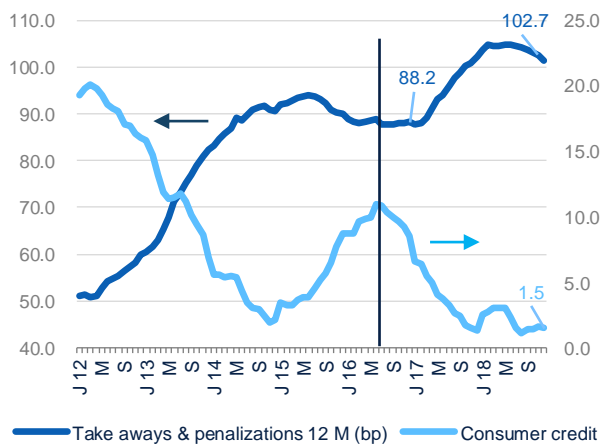
The deterioration of the adjusted delinquency rate for consumer credit was also reflected in all its components (Figure 3a.15). It should be noted that credit cards is the category that recorded the highest level of deterioration over the course of 2017 and in the first three months of 2018, in accordance with its adjusted delinquency rate. This slowed slightly from April to December 2018. In contrast, although the deterioration of automotive loans also increased in accordance with its adjusted delinquency rate, it was significantly lower than the other consumer credit categories.

The lower level of deterioration in automotive loans can be explained by the fact that cars are themselves the collateral against which loans are secured, whereas the other consumer categories are not secured with collateral. This means that these credit categories require higher levels of allowances for credit risks, which translates into significant write-downs and write-offs when such credit portfolios deteriorate. This point is illustrated by the case of credit cards. This type of credit is not secured with collateral, as is the case with automotive loans, and the total amount applied to credit cards in write-downs and write-offs accumulated over 12 months in December 2018 represented 50.4% of the total write-downs and write-offs that were applied to the sum of the different consumer credit categories (Figure 3a.16).

### 3a.8 Evolution of write-downs and write-offs as a reflection of the adjusted delinquency rate for consumer credit

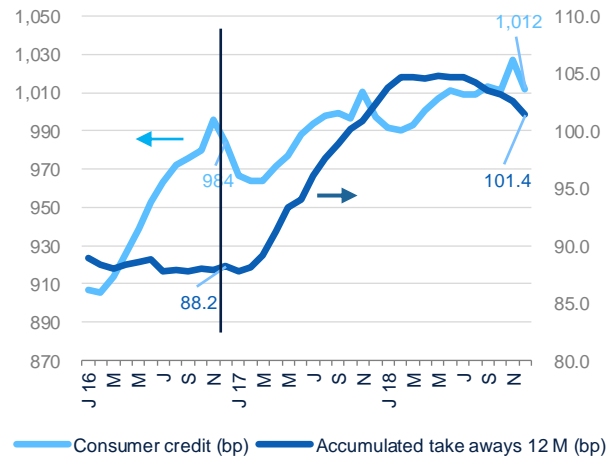
The increase in adjusted delinquency rate for consumer credit was associated with the increase in write-downs and write-offs that banking institutions had to apply from their past-due loan portfolio for this type of credit in order to clean it up and keep its delinquency rate at low levels. Thus, the cumulative amount of write-downs and write-offs over 12 months in the last month of 2016 stood at MXN 88.2 billion in December 2018 prices. In December 2018 the cumulative write-downs and write-offs over 12 months had increased by 14.9%, in real terms, to stand at MXN 101.4 billion (Figure 3a.17).

Figure 3a.17 Consumer credit: cumulative write-downs and write-offs over 12 months and annual growth of loan portfolio (MXN billion Dec-18 and real annual % change)



Source: BBVA Research based on data from Banco de México and CNBV

Figure 3a.18 Consumer credit: cumulative write-downs and write-offs over 12 months and performing credit balance (MXN billion Dec. 2018)



Source: BBVA Research based on data from Banco de México and CNBV

On the other hand, from December 2016 to December 2018 the real balance of the performing consumer loan portfolio increased only 2.8%, in real terms. Proportionally speaking, the growth in the deterioration of the credit portfolio, based on the amount of cumulative write-downs and write-offs over 12 months (14.9%), was 5.3 times higher than the growth of the performing consumer loan portfolio (2.8%) during this period. These figures show that over the course of 2017 and 2018, the performing consumer credit portfolio grew very slowly, while its deterioration increased substantially.

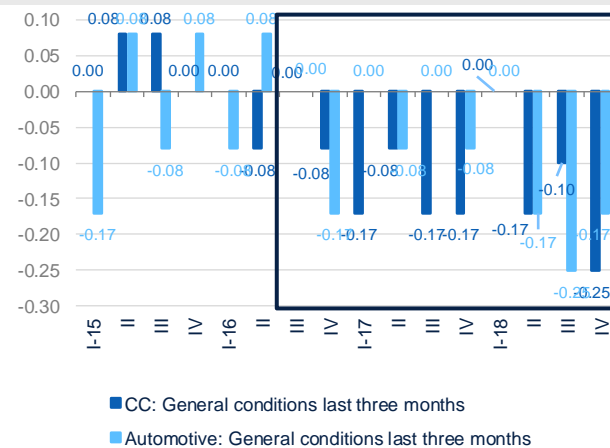
The above data on the reduced growth of the balance of consumer credit and the significant increase in the deterioration of this type of credit, based on the increase of write-downs and write-offs over 12 months, may also indicate that consumer credit is already facing a certain level of saturation in a specific group of customers, particularly those whose income has not increased, or has even decreased in real terms. This is explained by the limited growth of this group's credit portfolio, which has been accompanied by a significant deterioration in quality (or a significant increase in write-downs and write-offs over 12 months), both reflected in the same period.

The behavior of consumer credit write-downs and write-offs in 2017 and 2018 also indicates that if customer income in real terms does not recover significantly in the near future, there is a risk that part of the growth of the performing consumer credit portfolio will move into the past-due portfolio. In an environment that shows signs of weakness in household payment capacity, banks may have opted for stricter placement, which is reflected by modest real growth rates in the consumer credit portfolio. This in turn could help prevent a significant deterioration in the quality of the current consumer credit portfolio. This point is also suggested by the inverse relationship between the real annual growth rate of consumer credit and the amount of write-downs and write-offs for this credit category in real terms (Figure 3a.17), since the correlation coefficient between these two variables was -0.95 from January 2012 to December 2018.

### 3a.9 General conditions or standards of consumer credit approval: consumer credit on the supply side

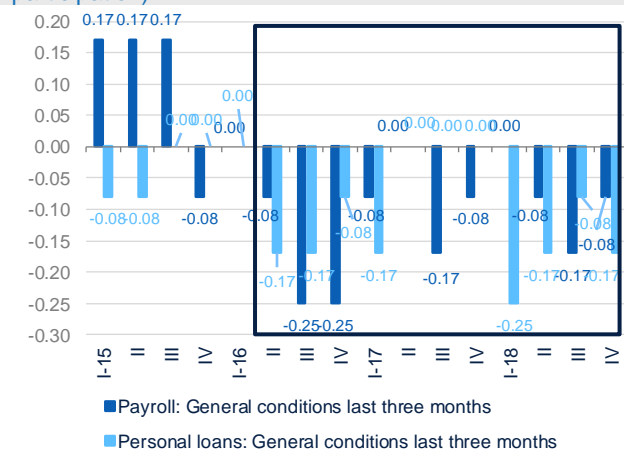
The slowdown in the growth rate of consumer credit, coupled with its increasing delinquency rate and adjusted delinquency rate, was reflected in the results of the quarterly survey that Banco de México (Banxico) publishes on general conditions and standards in the consumer credit market. The Banxico survey indicates that the banks have implemented restrictive standards for granting this type of credit (consumer credit) since around the second half of 2016.

Figure 3a.19 General standards for granting consumer credit: credit cards and automotive loans (Positive value, relaxation; Negative value, restriction)



Source: BBVA Research based on data from Banxico, large banks (75% of the credit portfolio)

Figure 3a.20 General standards for granting consumer credit: payroll and personal loans (Positive value, relaxation; Negative value, restriction; Banks with a higher participation)



Source: BBVA Research based on data from Banxico, large banks (75% of the credit portfolio)

In the case of approval conditions for consumer credit granted through credit cards and automotive loans, lenders adopted a restrictive stance from the fourth quarter of 2016 (Figure 3a.19). In the case of personal and payroll loans, a restrictive stance was adopted from the second quarter of the year. (Figure 3a.20). For these four types of consumer financing, the restrictive stance for granting credit continued until the fourth quarter of 2018.

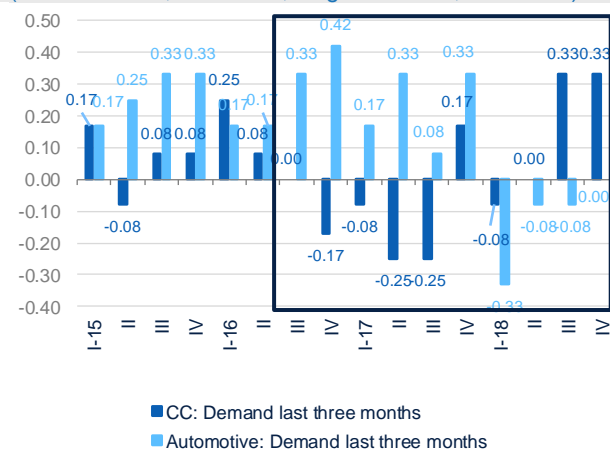
In reflecting a restrictive stance toward granting credit, the diffusion indices of the Banxico survey on consumer credit components also indicate that one factor behind the slowdown in the growth rate of this type of credit may have been supply. This may also be explained by the fact that the increase in the delinquency rate and adjusted delinquency rate for consumer credit in 2017 and 2018 forced banks to be more selective and stricter in granting new consumer credit, to minimize the risk of non-payment. Thus, by applying stricter credit granting criteria, banks were preventing further deterioration in the consumer credit portfolio.



### 3a.10 General conditions or standards for consumer credit approval: consumer credit on the demand side

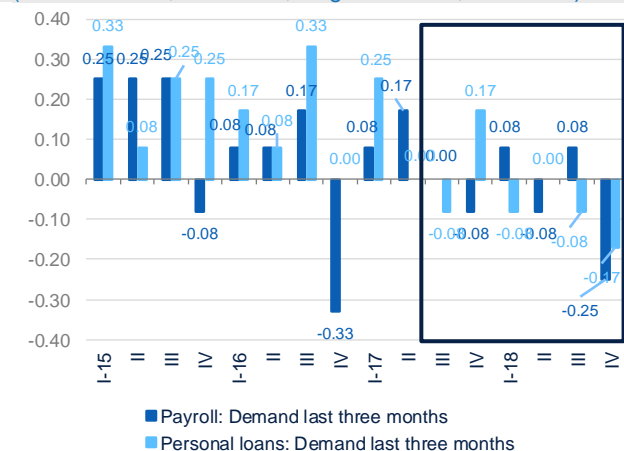
On the other hand, the Banxico survey on general conditions and standards in the consumer credit market for the period between 3Q16 and 4Q18 shows that there were no indicators reflecting a sustained credit demand in that period. For example, the indicator of demand for credit granted through credit cards indicates that demand was restricted during this period, except for 4Q17 and 4Q18 (Figure 3.a.21). For its part, the automotive loan demand indicator went from showing signs of expansion up to the end of 2017, to registering restriction in all three quarters of 2018. Demand for personal loans (Figure 3.a.22) showed restriction in all three quarters of 2018, while payroll loans rapidly alternated between registering a quarter of restriction to a quarter of relaxation or increased demand, as occurred in 1Q18 and 3Q18.

Figure 3a.21 Consumer credit demand: credit cards and automotive loans  
(Positive value, relaxation; Negative value, restriction)



Source: BBVA Research based on data from Banxico, large banks

Figure 3a.22 Consumer credit demand: payroll and personal loans  
(Positive value, relaxation; Negative value, restriction)



Source: BBVA Research based on data from Banxico, large banks

Unlike the supply side of consumer credit, in which the credit granting indicators showed restriction across all components or categories from 3Q16 to 4Q18, restriction on the demand side was not permanent over the course of these quarters in all components. In this regard, although consumer credit demand indices were not clearly or firmly restricted in all credit segments, automotive and personal loans were restricted throughout 2018 (Figures 3a.21 and 3a.22). This was not the case for credit granted through credit cards and payroll loans.

The contrast between the granting or supply conditions and the demand conditions of consumer credit components may indicate that lenders sought to reduce risk in 2018, while applicants sought more liquidity for credit cards and payroll loans, as they faced some form of budget constraint that may have been mitigated by consumer credit.

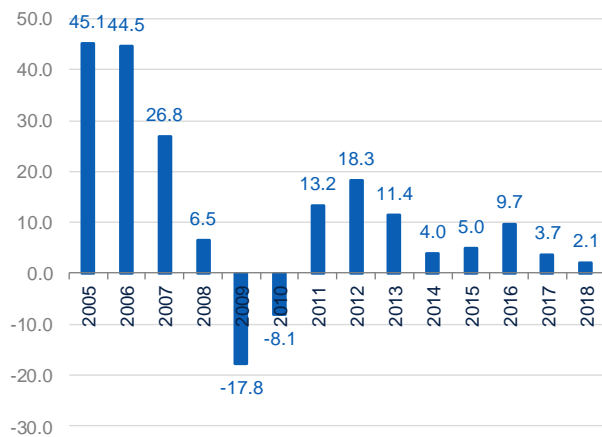
### 3a.11 Increase in the average consumer credit balance and minimum increase in real wages as a limit to current growth

From a wider time perspective, consumer credit recorded high growth rates in the mid 2000s and remained at high levels until 2007. Beginning in 2008, the dynamism of this loan portfolio was significantly affected by the recession that began in late 2008, the downturn from which lasted until 2010. Consumer credit began to grow again in 2011, but since 2014, its average real annual growth rate has receded to single-digit levels (Figure 3a.23).

It should be noted that from December 2004 to December 2018, the balance of the performing consumer loan portfolio issued by the commercial banks grew by 236.6% in real terms. In this period, the average balance of consumer loans for total and permanent workers registered with the IMSS grew in real terms by 111.8% and 121.7% respectively. By contrast, in these 14 years, the real average wages of workers registered with the IMSS grew only 6.9%.

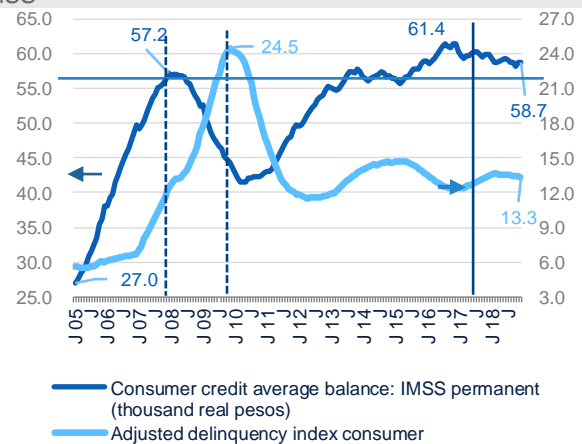
Below, reference will be made to the average balance of consumer loans per permanent worker registered with the IMSS, as these workers have stable employment that provides them with access to credit. Although this variable does not represent the current position of all customers who have a consumer loan with a bank, it does illustrate the way in which this credit has grown dynamically in a context in which the real incomes of the majority of those who have subordinate employment has only very narrowly increased in the last 14 years.

Figure 3a.23 Consumer credit: (Average real annual var %)



Source: BBVA Research based on data from Banxico, the CNBV and the INEGI

Figure 3a.24 Consumer credit: Adjusted delinquency rate and its real average balance per worker registered with the IMSS

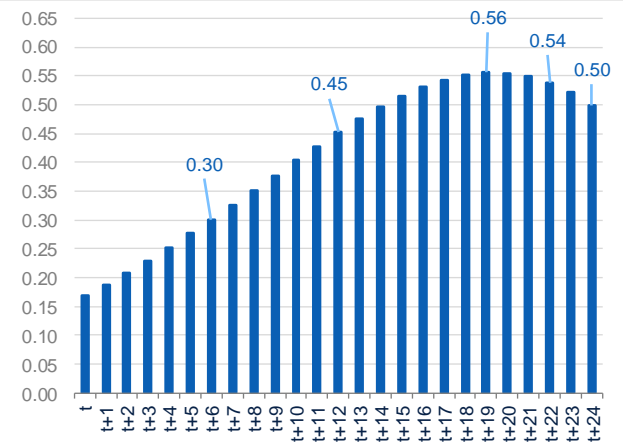


Source: BBVA Research based on data from Banxico, the CNBV and the INEGI

The above figures indicate that the increase in the average balance of consumer loans per permanent worker registered with the IMSS grew from MXN 27,000 in January 2005 to MXN 58,700 in December 2018 (Figure 3a.24). This increase did not keep pace with the increase in the average income in real terms of permanent workers registered with the IMSS. The disproportionality between growth in average consumer loan debt and workers' real incomes illustrates how, at a given moment, the financial commitments of those who acquire this kind of credit can reach and even exceed their ability to pay. If this occurs, then the delinquency rate and the adjusted delinquency rate would begin to increase each time the total balance of consumer credit increases, as happened mainly in 2017.

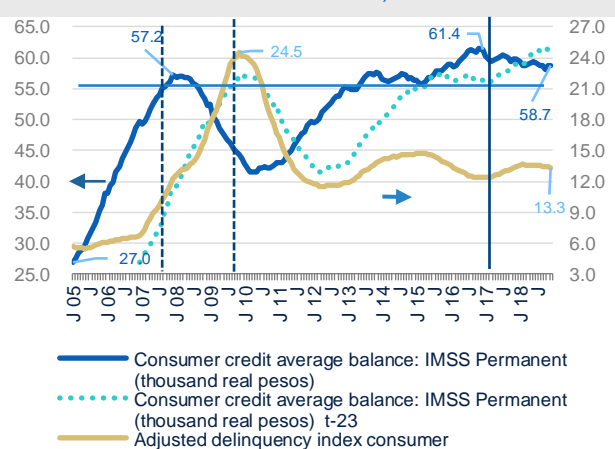
From August 2015, the balance of consumer loans per permanent IMSS worker was greater, in real terms, than the balance recorded in December 2007 (MXN 57,200), the date on which the average balance for this credit reached its maximum level before slowing in 2008 and contracting in 2009 and 2010 (Figure 3a.23). It should be noted that there is a direct relationship between the growth of real average balance per IMSS permanent worker and the adjusted delinquency rate. This means that as workers' financial commitments to servicing their loans (interest and principal payments) grow, if their purchasing power does not improve in the future, there will likely be a greater downturn in the consumer credit portfolio measured using the adjusted delinquency rate (Figure 3a.25). For example, the correlation ratio between these two variables peaks at 19 months on the adjusted delinquency rate after the consumer credit growth.<sup>5</sup> Figure 3a.26 provides the same information as Figure 3a.24 but also includes the outdated 23-month evolution (T-23) of the average balance of consumer credit per permanent worker registered with the IMSS. This graph shows the coincidence of the behavior of the average consumer credit relative to the adjusted delinquency rate:

Figure 3a.25 Consumer credit: correlation coefficient between the adjusted delinquency rate and its real average balance per IMSS worker for the current and previous period, t-i (Jan 2005 to Dec 2018)



Source: BBVA Research based on data from Banxico, the CNBV and the INEGI

Figure 3a.26 Consumer credit: average balance per permanent IMSS worker and the adjusted delinquency rate (thousands of MXN Dec 2018 and %)



Source: BBVA Research based on data from Banxico, the CNBV and the INEGI

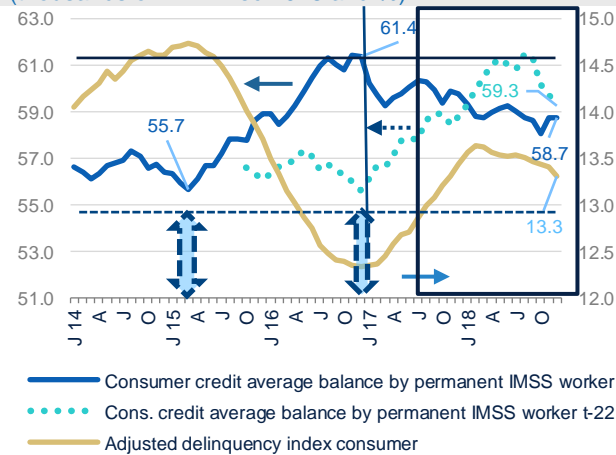
The points referred to in the preceding paragraphs indicate that increases in the average consumer credit balance, as illustrated by the case of the permanent IMSS worker, could be reflected months later in increases in the adjusted delinquency rate for this type of credit. This point illustrates that when consumer credit is growing at high rates and that growth is not accompanied by an increase in the payment capacity of consumers, there is a risk that a significant portion of new credit will end up past-due. This will give way to a further deterioration of the consumer credit portfolio and its growth rate may slow quickly. Figure 3a.27 illustrates this point for the period from January 2014 to December 2018, as explained in the following paragraph.

5: Note that between January 2005 and December 2018, the average balance of consumer credit per permanent worker registered with the IMSS and the adjusted delinquency rate are cointegrated. This means that there is a long-term relationship between both variables. It also appears that during this period the average balance of consumer credit per permanent worker registered with the IMSS affects the adjusted delinquency rate of this type of credit via Granger causality. However, there is no Granger causality from the adjusted delinquency rate to the average balance per permanent formal worker registered with the IMSS in terms of consumer credit.

In March 2015, the average balance of consumer credit per permanent worker registered with the IMSS was MXN 55,700 in real terms (Figure 3a.27). From the following month, this average balance began to increase. It was not until January 2017, or 22 months later, that the adjusted delinquency rate also increased, up from 12.3% in December 2016 to 12.4% in January 2017 and later reaching 13.6% from January to March 2018. The dotted line in Figure 3a.27 illustrates the direct relationship for this period between the growth of the average consumer credit balance per permanent IMSS worker and the adjusted delinquency rate with a lag of 22 months.

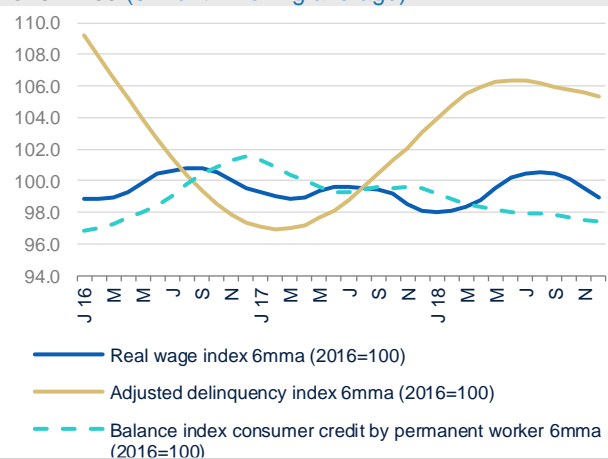
The correlation coefficient of the average consumer credit balance per permanent worker from April 2015 to January 2017, with respect to the adjusted delinquency rate for consumer credit from March 2017 to December 2018, was positive, at 0.82. This point confirms that while the average consumer credit balance per worker increased from MXN 55,700 in real terms in March 2017 to MXN 61,400 in December 2016, the adjusted delinquency rate also increased, but with a lag of 22 months, as it went from 12.3% in December 2016 to 13.6% in April 2018 (Figure 3a.27).

Figure 3a.27 Consumer credit: average balance per permanent IMSS worker and the adjusted delinquency rate Jan 2014 to Dec 2018 (thousands of MXN Dec 2018 and %)



Source: BBVA Research based on data from Banxico and the CNBV

Figure 3a.28 Rate of real average IMSS wages, of consumer adjusted delinquency rate and the average consumer credit balance per permanent IMSS worker: 2016 = 100 (6-month moving average)



Source: BBVA Research based on data from Banxico, the CNBV and the INEGI

The above figures suggest that growth of the average consumer credit balance since the start of 2015 per formal permanent worker registered with the IMSS—which has been lagging due to limited growth and even contraction of customers' real income (or IMSS average real wages) (growth of only 7% of the real average IMSS salary from December 2004 to December 2018)—and the slowdown in the growth of the personnel employed in the economic sectors (IGPOSE figures), form a set of factors that affected the quality of the consumer credit portfolio and limited its growth rate, as indicated by the data from the beginning of 2017 to the present. This point also highlights that however high the average consumer credit balance, while there are certain limitations, such as static real average salaries (Figure 3a.28), it is difficult for this type of credit to grow at high rates if the aim is to maintain a healthy portfolio (no growth in the portfolio's adjusted delinquency rate) that remains of high quality.

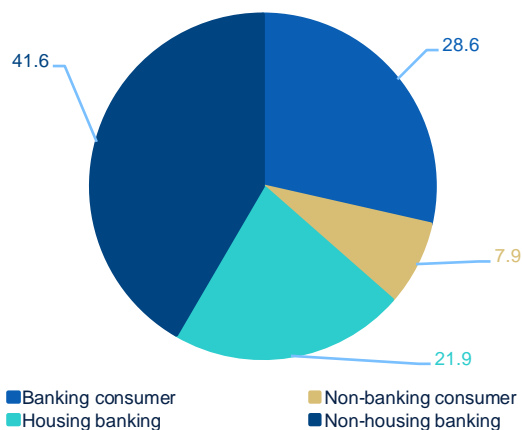
### 3a.12 Bank consumer loans and mortgage loans

The performing consumer loan portfolio granted by commercial banks is part of the total credit that households obtain. Banxico statistics refer to total consumer loan portfolios and bank and non-bank mortgage loans.

The other component of loans granted to households are mortgages. In this credit category, the main issuing entity is the Infonavit (Instituto del Fondo Nacional para la Vivienda de los Trabajadores – Mexican institute for workers' housing fund). In September 2018, the Infonavit's loan portfolios reached 57% of the total housing portfolio. In second place was commercial banking (34.1%), followed by the Fovissste (Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado – housing fund similar to the IMSS but for public sector employees)<sup>6</sup>(8.3%), which issues mortgage loans to government workers (Figure 3a. 30).

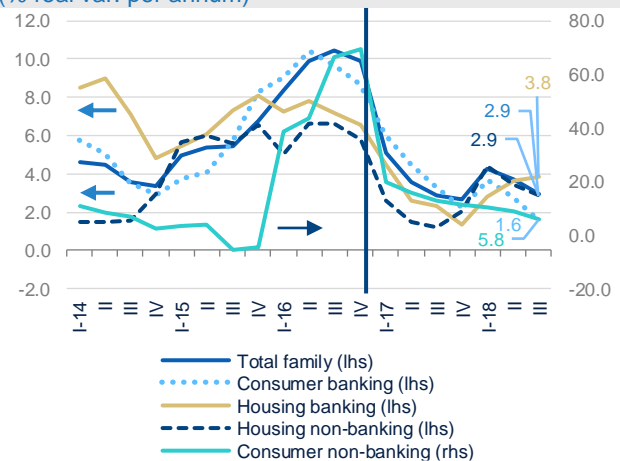
In September 2018, 36.5% of the total portfolio of credit granted to households was consumer credit (28.6% banking and 8% non-banking), while the remaining 63.4% of household credit went to mortgages (Figure 3a.29). In other words, in addition to meeting their financial obligations from consumer loans, households must also do the same with their mortgages. This means that household budgets not only allocate funds for basic needs (food, transportation, housing, clothing, education and others) but also to pay interest and principal on their consumer and mortgage loans. If the average IMSS salary, which is a useful guide to the average perceptions of the population working in the Mexico's formal sector, does not grow in real terms or grows only modestly, as happened from late 2004 to December 2018, then we can expect that the same has happened with real wages paid in the informal sector of the economy.

Figure 3a.29 Total family credit = consumer bank and non-bank loans + bank and non-bank mortgage loans (Sept, 2018)



Source: BBVA Research based on data from Banco de México

Figure 3a.30 Family consumer and housing bank and non-bank loans (% real var. per annum)



Source: BBVA Research based on data from Banco de México. Non-bank mortgage loans include loans from Infonavit, Fovissste and Sofomes

6: INFONAVIT (Instituto del Fondo Nacional para la Vivienda de los Trabajadores – Mexican institute for workers' housing), is a public body that grants loans to formal workers who work in private sector companies and are members of the Mexican Social Security Institute (IMSS). FOVISSSTE (Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado – housing fund attached to the institute of social security for public sector employees) is a public body that grants housing loans to public sector employees.

The previous point highlights that households that have acquired mortgages may not have much financial capacity for acquiring consumer loans. That is to say, the limited growth of household income measured by the evolution of the average IMSS earnings in real terms, along with a significant number of mortgage loans, may also be factors that inhibit the acquisition of new consumer loans, given households' limited ability to pay. In this sense, household caution, based on a desire to retain a good credit history enabling access to home or automotive loans in the future, leads households to make moderate use of other kinds of credit.

On the other hand, the Banxico data indicates that growth in the various categories of family credit (bank and non-bank consumer and mortgage loans) slowed rapidly from 2017 (Figure 3a.30). This indicates that the increase in inflation—particularly in energy prices—which began in January 2017, had a significant effect on the capacity of families to pay and that they moderated their demand for credit. According to Banxico data, at the same time as this was happening on the demand side, banks strengthened or tightened their credit granting criteria. The sharp slowdown of family credit that began in 2017 indicated that a major and long-lasting macroeconomic improvement would also be required to enable family credit to grow at higher real rates.

### 3a.13 Conclusions and Perspectives

The points discussed above, as well as the developments in various categories of family credit (see Figure 3a.30), indicate that, since the end of 2016, the slowdown in the growth rate of bank consumer credit is not an isolated event. This means that various factors that did not favor the expansion of consumer credit were present at the same time. An example of this is the slowing employment growth in the economic sectors (as indicated by the IGPOSE), the increase in inflation and the downturn in consumer credit quality indicators (increase in the delinquency rate and in the adjusted delinquency rate).

Given the limitations of the preceding context that determined the evolution of consumer credit in the past two years, this type of credit should grow at higher rates until sustained improvement in the macroeconomic environment happens. This should be reflected in a high GDP and employment growth rate, the latter by employing more people in the economic sectors (IGPOSE). The above must be accompanied by growth in the salaries and real income of workers and bank customers so that the financial burden that the new credits represent do not grow as a proportion of income. If, on the other hand, real average annual salaries increase by 0.5%, as they have in the past 14 years, and the employment rate grows by 1.5%, as the IGPOSE did in November of 2018, consumer credit will not have an important source of momentum to make it grow dynamically and it will continue to grow at rates of around 3%, similar to those recorded in 2017 and 2018.

### **3.b Mexican corporations' foreign debt: the scenario changes, but risks for banks remain limited**

In our January 2016 edition of the Mexican Banking Outlook, we analyzed the behavior of the foreign-currency debt held by Mexican corporations. Back then, we observed a significant increase in the indebtedness from abroad during the period following the crisis of 2008, triggered by an increase in liquidity from international investors and laxer credit conditions.

Today, the scenario is different. Companies have reduced their demand for foreign funds and seem to be using domestic bank financing instead. To help understand this new environment, we have updated some of the descriptive analysis we carried out in 2016 in an effort to identify the most relevant changes and the potential risks for banks in Mexico.

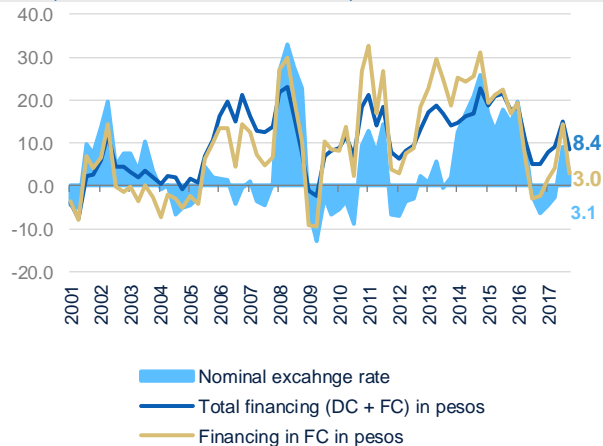
#### **3b.1 The performance of total corporate lending is linked to exchange rate developments**

At the end of the September 2018, total corporate lending—which includes bank credit in national currency (NC) and in foreign currency (FC), domestic stock market financing in NC and foreign financing in FC—recorded a balance of MXN 5.9 billion, which implied a nominal growth of 8.4% compared to the same quarter of the previous year (3.3% in real terms). This growth was higher than that recorded in 3Q17 (5.0% nominal annual) but less than that of the previous three years (3Q14: 14.0%; 3Q15: 22.8%; 3Q16: 17.4%).

The historical and recent performance of total corporate lending reflects the performance of its FC-denominated component, which, in turn, is related to exchange rate developments (Figure 3b.1). In general, an exchange rate depreciation increases the lending balance in FC through a valuation effect. As this represents a significant proportion of the total corporate lending (53.1% on average from December 2000 to September 2018 and 51.1% at the end of the September 2018), this total also increases. In other words, there is a high positive correlation between the performance of total corporate lending and its FC-denominated component valued in MXN (correlation coefficient of 0.91) which, in turn, has a high correlation (0.67) with exchange rate movements.

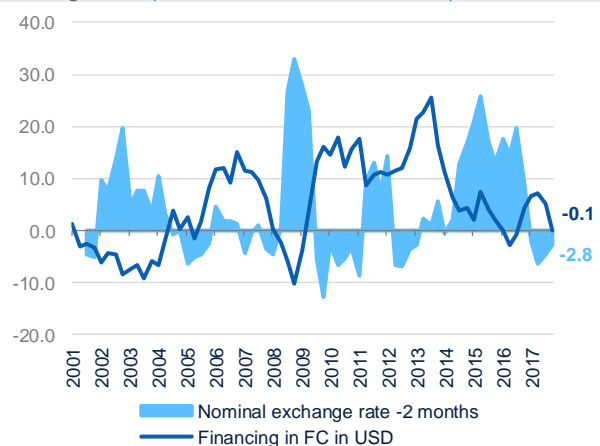
On the other hand, in recent years (from 2011 to 2018) lending in USD has a significant negative correlation with the exchange rate (-0.55), albeit with a certain lag. This means that when there is an exchange rate depreciation, the lending balance in FC valued in USD tends to decrease one or two quarters after this depreciation is recorded. Likewise, the exchange rate depreciation that emerged in December 2014 could be related to the slowdown that this lending recorded from March 2015, which was maintained in 2016 before slowing even further in 2017 (Figure 3b.2). Over the course of 2018, this lending grew at relatively moderate rates (4.4% average nominal annual rate between March and September 2018, latest information available), in line with the exchange rate recovery. This suggests that, when episodes of high exchange rate volatility are observed, companies tend to replace foreign lending with domestic NC-denominated lending.

Figure 3b.1 Corporate lending balance and exchange rate (Nominal annual % variation)



Source: BBVA Research/Banxico

Figure 3b.2 Corporate lending balance in USD and exchange rate (Nominal annual % variation)

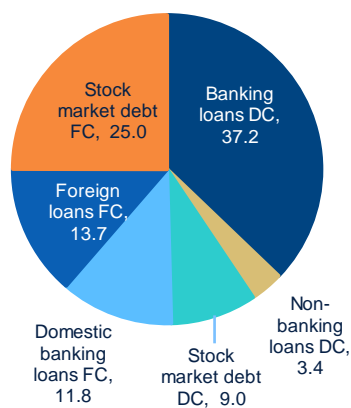


Source: BBVA Research/Banxico

### 3b.2 Bank credit in NC granted in Mexico was the main driving force behind total corporate lending during 2018

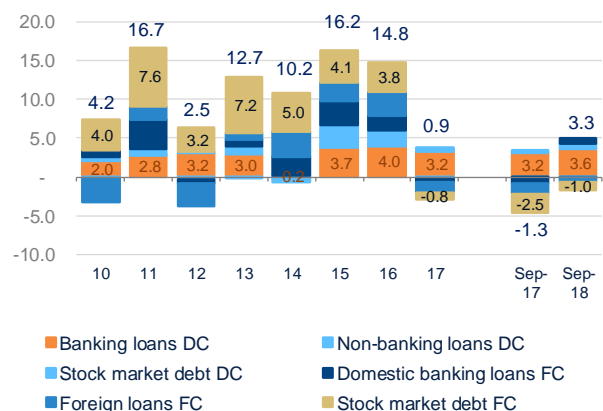
From among the different corporate lending sources, bank credit in NC stands out. At the end of September 2018, it represented 37.2% of total corporate lending. This was followed by stock market debt issued abroad, which represents 25.0% of total company debt. In third and fourth place are FC-denominated loans granted abroad and in Mexico, which represent 13.7% and 11.8% respectively. Finally, stock market debt issued in Mexico and non-bank loans in NC follow and represent 9.0% and 3.4% of total corporate lending (Figure 3b.3).

Figure 3b.3 Corporate lending balance. September 2018 (Percentage structure by type of lending, %)



Source: BBVA Research/Banxico

Figure 3b.4 Corporate lending balance (Real annual % variation and contribution to growth by type of lending)



Source: BBVA Research/Banxico



In terms of the contribution of each type of lending to total growth, bank credit in NC is highlighted as the main driving force, owing to the fact that this is the largest source of corporate lending and that its growth rate was higher than that of other components. At the end of the September 2018, the real annual growth of the total corporate lending balance was 3.3%, of which 3.6 pp came from bank credit in NC (Figure 3b.4). In second place was bank credit granted in Mexico in FC, which contributed 0.6 pp to the total growth rate. In contrast, both foreign credit and stock market debt in FC recorded negative contributions to total growth (-0.7 pp and -1.0 pp respectively), as observed since 2017.

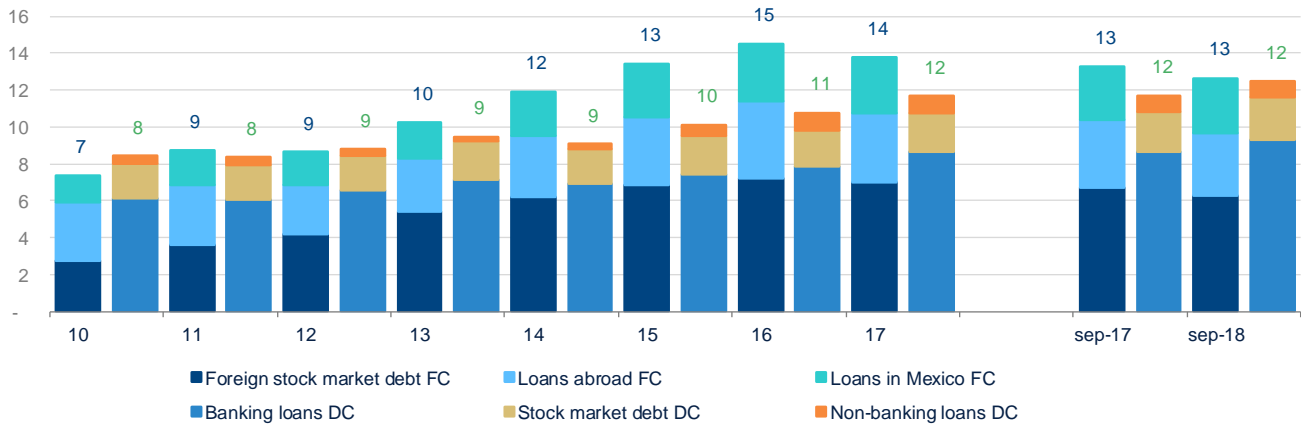
This performance is consistent with our hypothesis of replacing foreign financing with domestic banking and contrasts with what we observed in the first analysis that we carried out on company indebtedness in FC, published in the Mexico Banking Outlook of January 2016. In that analysis, we observed that, during the period from 2009 to 2014, this type of financing increased significantly and it was stock market debt issued abroad that contributed most to this dynamism. As mentioned at the time, the growth in foreign debt was the result of a low interest rate environment in developed countries, combined with high liquidity of international investors.

However, from 2015 to the present day, a different performance has been observed. The dynamism of foreign financing in FC, both with credit and through the stock market, has reduced substantially and, although foreign stock market debt continues to be a significant source of funds, bank loans in NC granted in Mexico have been consolidated as the main source of financing for companies.

### **3b.3 Foreign debt of Mexican corporations remains stable and these corporations represent a lower liquidity risk than their international peers**

The possible replacement of foreign financing with domestic financing is also observed in the different performance of both sources with regard to GDP. As of September 2018, the corporate lending balance in FC sat at 12.8% of GDP, only half a percentage point above financing in NC. As shown in Figure 3b.5, the penetration of this type of financing has decreased since 2016, when it reached its highest point (15% of GDP). Since mid-2017 it seems to have stabilized at around 13.0%. In contrast, the penetration of financing in NC has increased from around 9% of GDP between 2012 and 2014 to 12% since 2017 (Figure 3b.5).

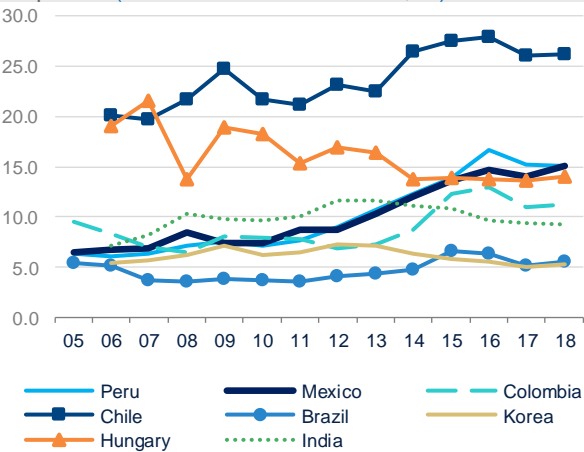
Figure 3b.5 Financing to Mexican companies  
(Balance in relation to GDP, %)



Source: BBVA Research/Banxico

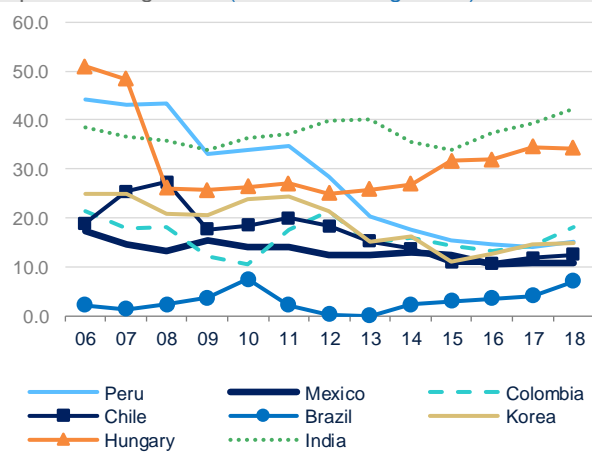
Compared to other emerging countries, Mexico's penetration of corporate lending in FC is on a level similar to that of Hungary and Peru and just below Chile (Figure 3b.6). In terms of the maturity period, companies in Mexico have a low proportion of short-term foreign debt —around 10%, just above Brazil— which suggests that Mexican companies have a lower liquidity and refinancing risk than companies in similar countries (Figure 3b.7).

Figure 3b.6 Foreign debt of non-financial private companies  
(Balance in relation to GDP, %)



Source: BBVA Research/World Bank

Figure 3b.7 International comparison of short-term corporate foreign debt  
(% of total foreign debt)

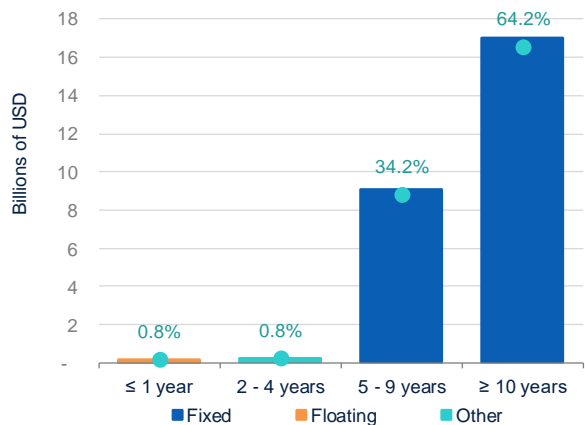


Source: BBVA Research/World Bank

### 3b.4 Low liquidity risk and risk of default on stock market debt issued abroad, but with lower placement activity compared to previous years

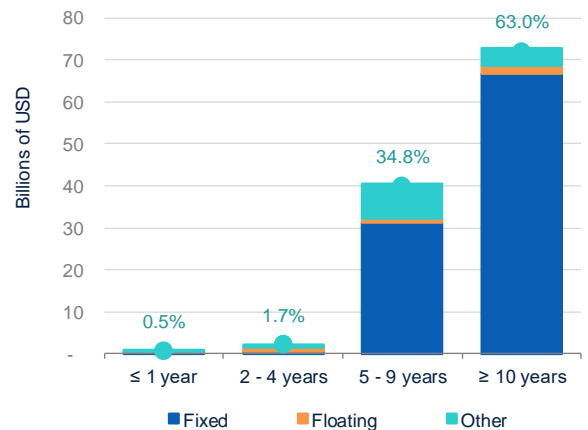
The low liquidity risk of Mexican corporate foreign debt can also be observed in the characteristics of stock market debt issued abroad. As shown in Figure 3b.8, of the USD 27.5 billion issued in 2017 and 2018, 98.4% was placed at a fixed rate and with a maturity period of five years or more. These characteristics have been maintained in terms of what had been issued in previous years. Therefore, taking into consideration the placements made since 2012 (Figure 3b.9), the percentage issued at a fixed rate was 85.6% and, of this total, 97.8% had maturity periods of five years or more. This is positive as it suggests that companies that have issued debt abroad maintain a limited liquidity risk.

Figure 3b.8 Foreign stock market debt issued by Mexican companies by type of rate and maturity period. 2017 and 2018 (Billions of USD and % compared to the total)



Source: BBVA Research/Bloomberg

Figure 3b.9 Foreign stock market debt issued by Mexican companies by type of rate and maturity period. 2012–2018 (Billions of USD and %)



Source: BBVA Research/Bloomberg

The risk of default on foreign issues by Mexican companies also seems to be contained, because such issues do not appear significantly impaired. Table 3b.1 shows the transition matrix of corporate debt issued abroad since 2012 that is still current. It shows that all instruments with the highest ratings (AA to BBB) have maintained the same ratings since when they were issued. Some ratings have been withdrawn for instruments with BB and B ratings, although many instruments maintain their original rating. Furthermore, as can be seen in Figure 3b.10, instruments with a B rating represent a low percentage of the total debt issued.

Table 3b.1 Transition matrix of Mexican corporations' foreign stock market debt. Performing issues since 2012

Initial Rating	Observed						Withdrawal
	A	B	BB	BBB	CCC		
AA	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
A	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BBB	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
BB	0.00%	0.00%	46.77%	7.41%	2.22%	43.60%	
B	0.00%	40.37%	0.00%	0.00%	2.36%	57.27%	

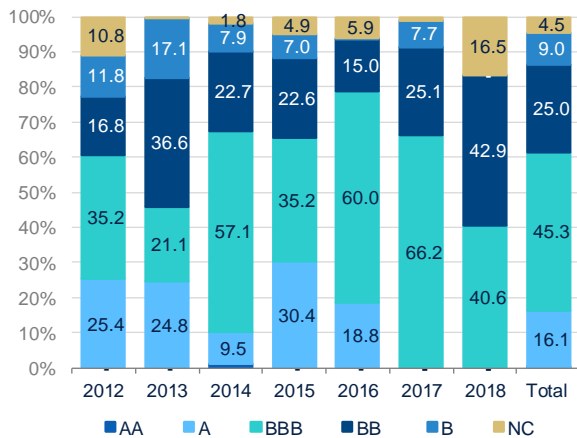
Source: BBVA Research/Bloomberg

The transition matrix was calculated using the ratings given by Fitch, Moody's and S&P as a reference. When an instrument has been rated by more than one credit rating company, the highest rating is taken into account.

However, as Figure 3b.10 indicates, most of the foreign stock market debt issued in 2017 and 2018 had a rating of BBB or lower on a global scale (67% of the debt issued in 2017 was BBB and 51.4% in 2018 was BB) when, in previous years, there were issues with an A rating. This could suggest that lower risk companies are those that have opted to reduce this type of debt.

Furthermore, the sharp decrease in the amount of debt issued in 2018 stands out. Whereas in 2017 Mexican companies issued almost USD 21.4 billion abroad, in 2018 the amount issued was just USD 6.2 billion, i.e., reduced to almost a third and a figure equivalent to the amount of debt issued in NC in Mexico (Figure 3b.11). This performance is consistent with our argument that foreign financing has been replaced by domestic bank financing.

Figure 3b.10 Stock market debt issues in FC by year of issue (% distribution by rating)



Source: BBVA Research/Bloomberg

Figure 3b.11 Foreign stock market debt issues in FC and domestic stock market debt issues in NC (Billions of USD)

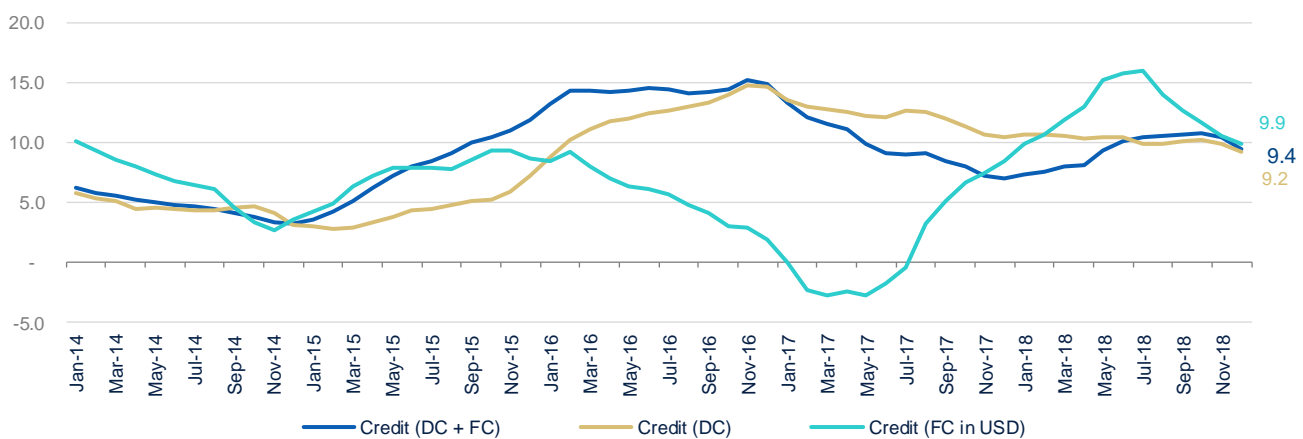


Source: BBVA Research/Bloomberg and Banxico

### 3b.5 Corporate lending in FC granted in Mexico also represents a limited risk

With respect to the FC indebtedness of Mexican banks, we believe that the risks also remain relatively limited. On the one hand, during 2017 and the first half of 2018, FC credit valued in USD accelerated, so that from January 2018 to July 2018 it achieved an average real annual growth of 16.0%. But, from the second half of 2018, the trend reversed, as the average growth rate during this period was 9.9% (Figure 3b.12), lower than observed in previous periods and similar to the growth in NC credit (9.2%).

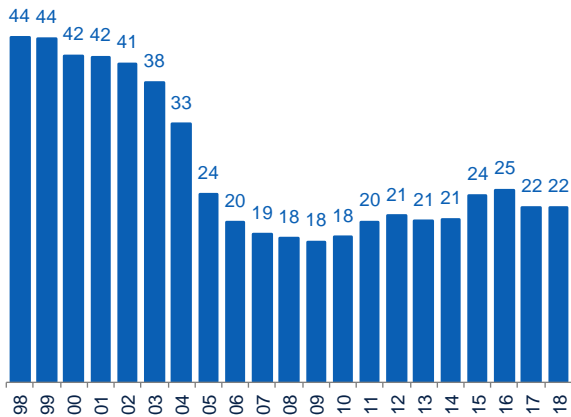
Figure 3b.12 Balance of business loans granted by banks in Mexico  
(Real annual growth %, 6-month moving average)



Source: BBVA Research/Banxico

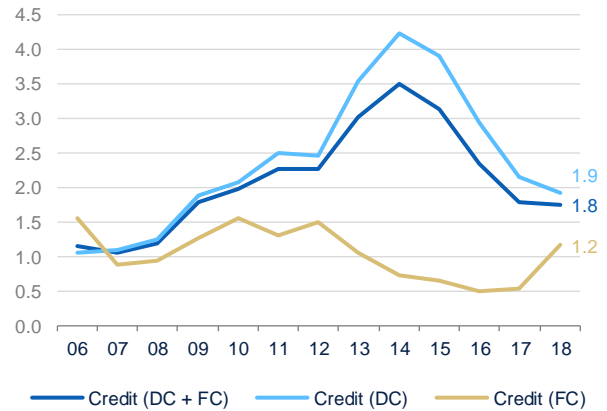
The performance of the FC portfolio has limited banks' exposure to this type of credit, reducing it from previous years. In December 2018, FC-denominated credit accounted for 22% of the total corporate portfolio, a level similar to that at the end of 2017 and 3 pp less than recorded in 2016 (Figure 3b.13). Furthermore, the business portfolio has remained healthy, with a total average delinquency rate of 1.9% in 2018. Although a delinquency rate increase can be observed in the FC-denominated portfolio, this remains below the delinquency rate of the total portfolio and the NC-denominated portfolio (Figure 3b.14).

Figure 3b.13 Corporate lending in FC by Mexican banks (Percentage of the total corporate portfolio, %)



Source: BBVA Research/Banxico

Figure 3b.14 Delinquency rate of bank loans to companies (%)

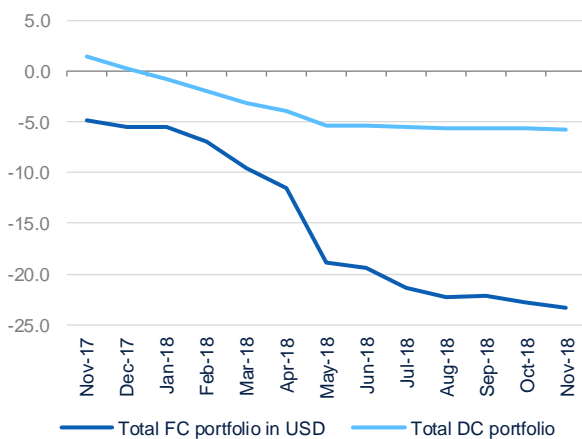


Source: BBVA Research/Banxico

### 3b.6 Companies with greater exposure to FC loans continue to have natural hedging due the nature of their income

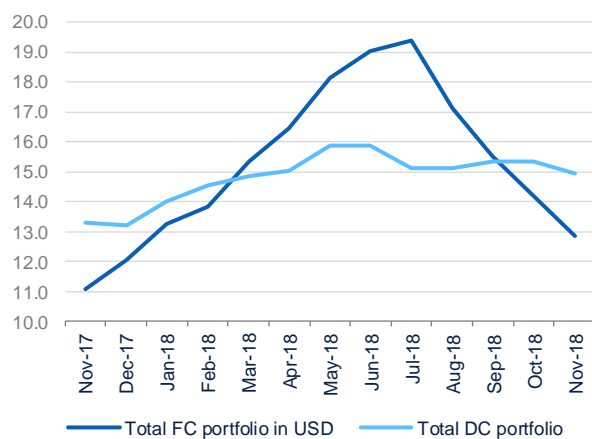
As expected, a large proportion FC bank loans are to large companies. During 2018, this proportion remained relatively stable at 98%, although marginal increases were recorded compared to previous years (96.7% on average in 2017 and 96.3% in 2016). For these companies, the FC credit balance at November 2018 accounted for 27.7% of total credit (NC + FC), a share similar to the 2017 average (27.1%), but less than 2016 (29.5%).

Figure 3b.15 Bank loans to SMEs (Real annual growth %)



Source: BBVA Research/CNBV

Figure 3b.16 Bank loans to large companies (Real annual growth %)



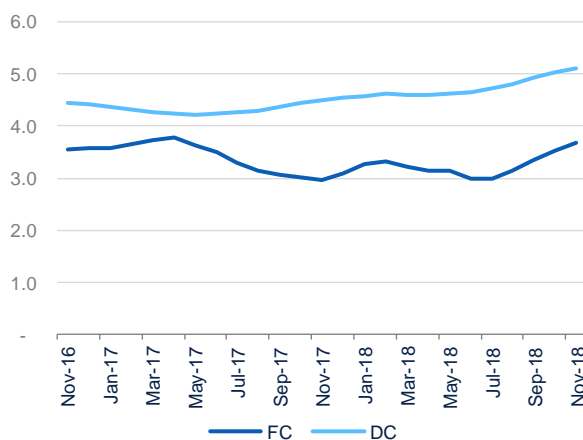
Source: BBVA Research/CNBV

The FC credit balance of SMEs is very small (USD 610 million at November 2018) and has been in continuous decline since 2017, deepening in 2018, even more than the decrease in the NC credit balance (Figure 3b.15). Consequently, the FC credit share of the total SME portfolio has reduced from an average of 3.9% in 2016 to 3.3% in 2017 and 2.8% in 2018. As such, the performance of total FC bank credit is explained mainly by that granted to large companies (Figure 3b.16).

The quality of this portfolio demonstrates different performances according to company size and in relation to the NC-denominated portfolio. Firstly, the delinquency rate of the FC credit of SMEs is higher than that of large companies (3.8% vs 1.0% as at November 2018), which also occurs in the NC-denominated credit (Figure 3b.17). This is to be expected given that SMEs are companies with a higher relative risk.

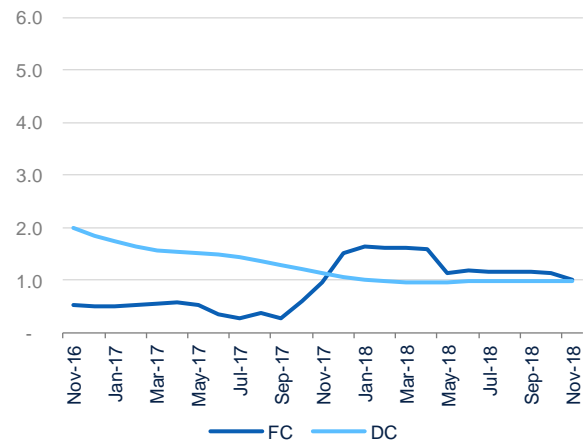
Furthermore, the delinquency rate of FC credit is lower than that of NC credit for SMEs. This suggests that it is the lower risk SMEs that obtain FC loans.

Figure 3b.17 Delinquency rate of SME loans (%)



Source: BBVA Research/CNBV

Figure 3b.18 Delinquency rate of loans to large companies (%)



Source: BBVA Research/CNBV

A lower delinquency rate was observed in FC loans to large companies to September 2017. However, this grew gradually and by January 2018 was above the NC delinquency rate, although it subsequently decreased. From the second half of the year it remained relatively stable at 1.0% (Figure 3b.18). This was because two banks in the system recorded a significant yet temporary impairment in their FC-denominated portfolios in September 2017.

With regard to the economic sector of companies with bank loans, mining companies and those providing accommodation and food services have the greater exposure to FC loans (Figure 3b.19). These companies account for 16% of the total number of FC-denominated loans (6% and 10% respectively, Figure 3b.20). For the former, the FC credit balance accounts for almost 83% of their total portfolio, while this percentage is 57.4% for the latter. A significant part of the income obtained by companies in these sectors is usually FC-denominated. Consequently, these types of company have a natural hedge on the loans that they obtain in FC and, therefore, a limited exchange risk. Two examples of mining companies are Peñoles and Gmexico. According to information reported to the Mexican Stock Exchange, over the third quarter of 2018, foreign income accounted for 76.9% and 58.5% of the total income of these companies respectively. Although companies in the tourism sector do not necessarily receive FC income, it is likely

that their sales performance is linked to the exchange rate. As evidence of this, there was a high correlation (0.60) during the period from March 2011 to June 2018 between annual variations in the GDP implicit price index of the temporary accommodation and food and beverage preparation services sector and annual variations in the exchange rate. In other words, prices for the services offered by companies in this sector may be indexed to the exchange rate.

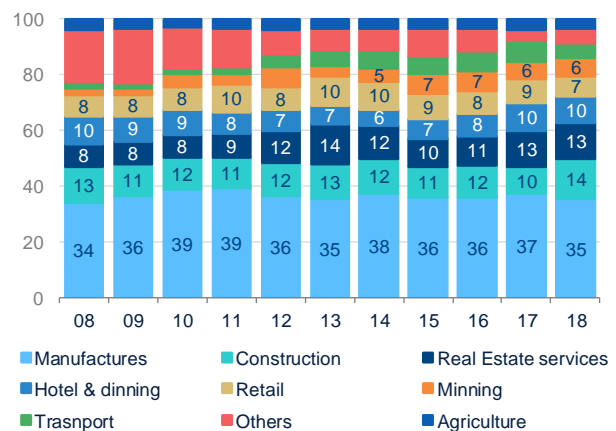
The sector in third place in terms of its exposure to FC bank loans is manufacturing (32.8% of the total loans granted to this sector, Figure 3b.19), which also represents the largest proportion of the FC-denominated loans (35%, Figure 3b.20). This sector includes companies specialized in the manufacture of transportation equipment and the manufacture of mineral-based products, as well as metallurgical companies and food industry companies, which account for the largest proportion of FC loans (20.8%, 17.5%, 14.8% and 10.1% respectively, as at December 2018). These types of company also allocate a large part of their production to exports, so it is to be expected that they require FC-denominated loans. For example, according to data from INEGI, exports accounted for 87% of the value of the automotive industry's total production in 2018.

Figure 3b.19 FC loans by economic sector. Dec 2018  
(% of the total portfolio in each sector)



Source: BBVA Research/Banxico

Figure 3b.20 FC loans by economic sector.  
(% distribution by economic sector)



Source: BBVA Research/Banxico

### 3b.7 Conclusions

In summary, the performance of corporate lending in FC was different in 2018 from previous years. In particular, there was a lower indebtedness from abroad, whereas the credit granted by domestic banks, in particular that denominated in NC, grew continuously and became the main driving force behind corporate lending. This performance is closely linked to exchange rate developments. Thus, a fall in the exchange rate recorded between 2014 and 2016 could have changed company preferences, as they opted to obtain domestic loans instead of foreign funding. Nevertheless, the companies that continue to be financed with foreign stock market debt have done so under unrestricted conditions in terms of rate and term, given that most placements have been made at fixed rates over the long term, thus limiting the liquidity risk of the issuing companies.



FC loans granted by Mexican banks accelerated during 2017 and the first half of 2018 but performed more moderately from the second half. This has enabled the exposure of banks to FC loans to remain relatively stable. Although the delinquency rate of this portfolio recorded some increases in 2017, the impairment was focused on a few banking institutions and seems to have been temporary, given that at the start of 2018 it decreased and remained stable toward the end of the year. This is also the result of companies with more FC debts having a natural hedge because they belong to sectors where production is destined primarily for export. Therefore, they tend to obtain income in FC or income linked to exchange rate movements.

Therefore, given the information analyzed, we believe that the FC indebtedness of Mexican companies does not presently pose a risk to the Mexican banking system. We also believe that the process of replacing foreign financing with domestic financing could be maintained if exchange rate volatility continues and if foreign lending restrictions persist. However, we are not ruling out a reversal of this phenomenon in the future.



Table 4.2 Private Sector Credit and Financing (Figures for the end of the period). Balances in billions of December 2018 pesos

	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13	IV 14	IV 15	IV 16	IV 17	III 18
<b>Total: All categories</b>	6,316	5,973	6,144	7,270	7,482	8,212	8,802	9,662	11,004	11,091	10,889
Banking	2,509	2,440	2,554	2,904	3,142	3,380	3,543	3,970	4,408	4,601	4,792
Non-bank	3,807	3,533	3,591	4,366	4,340	4,832	5,259	5,691	6,597	6,490	6,097
<b>Total Consumer</b>	828	731	735	837	948	1,023	1,052	1,117	1,310	1,364	1,384
Banking	713	582	580	691	804	861	886	959	1,042	1,065	1,083
Non-bank	115	149	155	147	145	162	166	158	268	299	301
<b>Total Housing</b>	1,617	1,641	1,716	1,808	1,894	1,932	2,001	2,143	2,273	2,314	2,410
Banking	475	501	534	581	611	654	685	741	789	799	832
Non-bank	1,142	1,140	1,182	1,227	1,282	1,278	1,316	1,402	1,484	1,514	1,578
<b>Total Companies</b>	3,871	3,601	3,694	4,625	4,640	5,258	5,748	6,401	7,421	7,414	7,096
Banking	1,321	1,357	1,440	1,633	1,728	1,866	1,972	2,271	2,577	2,737	2,877
Non-bank	2,550	2,244	2,253	2,992	2,913	3,392	3,776	4,131	4,844	4,677	4,219
<b>Real annual percentage change, %</b>											
<b>Total: All categories</b>	11.2	-5.4	2.9	18.3	2.9	9.8	7.2	9.8	13.9	0.8	1.0
Banking	7.1	-2.7	4.6	13.7	8.2	7.6	4.8	12.1	11.0	4.4	6.3
Non-bank	14.1	-7.2	1.6	21.6	-0.6	11.3	8.8	8.2	15.9	-1.6	-2.8
<b>Total Consumer</b>	-7.3	-11.7	0.6	13.9	13.3	7.9	2.9	6.2	17.3	4.1	2.4
Banking	-6.6	-18.3	-0.4	19.1	16.3	7.1	2.9	8.2	8.7	2.2	1.6
Non-bank	-11.2	28.9	4.5	-5.6	-1.1	12.0	2.5	-4.8	69.4	11.5	5.8
<b>Total Housing</b>	1.2	1.5	4.5	5.4	4.8	2.0	3.6	7.1	6.1	1.8	3.2
Banking	5.7	5.4	6.5	8.8	5.3	6.9	4.8	8.1	6.5	1.3	3.8
Non-bank	-0.6	-0.2	3.7	3.8	4.5	-0.3	3.0	6.6	5.8	2.0	2.9
<b>Total Companies</b>	21.5	-7.0	2.6	25.2	0.3	13.3	9.3	11.4	15.9	-0.1	0.0
Banking	17.0	2.7	6.1	13.4	5.8	8.0	5.7	15.1	13.5	6.2	9.0
Non-bank	24.0	-12.0	0.4	32.8	-2.7	16.5	11.3	9.4	17.3	-3.5	-5.4
<b>Percentage of GDP, %</b>											
<b>Total: All categories</b>	34.5	32.9	32.0	35.0	35.9	39.7	40.8	43.5	46.0	46.5	46.1
Banking	13.9	13.5	13.5	14.2	15.3	16.6	16.7	18.1	18.8	19.6	20.5
Non-bank	20.6	19.4	18.5	20.7	20.5	23.2	24.0	25.4	27.2	26.9	25.7
<b>Total Consumer</b>	4.6	4.0	3.9	4.1	4.6	5.0	5.0	5.1	5.6	5.8	5.9
Banking	3.9	3.2	3.1	3.4	3.9	4.2	4.2	4.4	4.4	4.5	4.6
Non-bank	0.6	0.8	0.8	0.7	0.7	0.8	0.8	0.7	1.1	1.3	1.3
<b>Total Housing</b>	8.9	9.1	9.1	8.9	9.2	9.5	9.5	9.8	9.7	9.9	10.3
Banking	2.6	2.8	2.8	2.8	3.0	3.2	3.2	3.4	3.4	3.4	3.6
Non-bank	6.3	6.3	6.2	6.0	6.3	6.3	6.2	6.4	6.3	6.4	6.7
<b>Total Companies</b>	21.0	19.8	19.1	22.0	22.0	25.2	26.3	28.6	30.7	30.9	29.9
Banking	7.3	7.5	7.6	8.0	8.4	9.1	9.3	10.4	11.0	11.7	12.3
Non-bank	13.7	12.3	11.5	14.0	13.6	16.1	17.0	18.3	19.7	19.2	17.6
<b>Infrastructure and number of bank cards (units)</b>											
<b>ATMs</b>	29,640	33,648	35,942	36,427	40,194	40,811	42,931	45,781	47,945	49,508	51,563
<b>POS terminals</b>	446,025	446,792	482,299	523,578	556,273	630,700	731,225	851,486	898,853	965,681	1,105,704
<b>Branches*</b>	10,722	10,731	11,291	11,785	12,407	12,581	12,698	12,234	12,522	12,743	12,734
<b>Number of current cards (figures in millions)</b>											
<b>Credit (Source: CNBV)<sup>1</sup></b>	30.7	25.8	23.9	27.6	25.9	26.9	28.0	24.5	26.3	27.1	27.7
<b>Credit (Source: Banxico)</b>	25.2	22.1	22.4	24.7	25.4	25.9	28.5	29.6	31.2	27.2	27.2
<b>Debit</b>	47.0	52.3	61.7	74.0	85.3	100.2	105.3	104.9	103.5	104.6	103.8

Continue on the next page



## 5. Major reforms to the secondary legal and regulatory framework applicable to universal banking

Table 5.1 Major reforms to the regulatory framework applicable to universal banking: 2018

Publication	Summary	DOF
1. CNBV: Resolution amending the general provisions applicable to credit institutions (operational risk)	Precisions were made to the operational risk capital requirements regime, extending the compliance deadline for the benefit of banks with an average monthly credit portfolio of less than 30 billion Investment Units.	Jan 22, 2018
2. Law regulating financial technology institutions	The aim of the law is to regulate the financial services provided by Financial Technology Institutions, along with their organization, operation and functioning, and the financial services offered or carried out through innovative means. New financial institutions dedicated to crowdfunding or issuing e-money are created. It also establishes tasks Banco de México with regulating the recognition and use of virtual assets. Lastly, the "innovative models" regime for the provision of financial services stands out: it will enable financial institutions (including FinTechs), as well as other start-ups, to offer financial services for the benefit of users in a regulatory environment that encourages innovation while still acting prudently (Regulatory Sandbox).	Mar 9, 2018
3. CNBV: Resolution amending the general provisions applicable to credit institutions (systemically important institutions)	The methodology used to determine the domestic banks' systemic importance is being adapted to include off-balance sheet items in total assets considered. The methodology will now also use the total value of derivative positions, adding liability positions (instruments held for trading and hedging purposes), which were previously deducted from asset positions. These changes aim to provide a more comprehensive view of the size and complexity of credit institutions.	Mar 14, 2018
4. "CNBV: Resolution amending the general provisions applicable to credit institutions (internal audit) and the general provisions applicable to institutions and issuers supervised by the CNBV that hire external audit services for basic financial statements	Adjustments are made to the requirements that members of the audit committee must meet, specifying that their selection should take into account their knowledge and experience in matters such as accounting, auditing and internal control, along with core business subjects. These members must carry out their duties in a way that is transparent, independent and free from any conflict of interest, ensuring that their duties are not subject to personal, business or economic interests. At the same time, regulations on independent external audit services are repealed, as they can now be found in the new specific circular on the matter.	Apr 26, 2018
5. CNBV: Resolution amending the general provisions applicable to credit institutions (stress tests)	The submission procedure for information and results on stress tests carried out under supervisory and own internal scenarios is relaxed.	Jun 26, 2018
6. Banco de México: Circulars 8 and 9 of 2018 (amending 3/2012 and 34/2010, on payments in foreign currency using debit and credit cards, respectively)	It establishes the mandatory use of a CNBV authorized price provider for obtaining the price of currencies other than the US dollar. Also, the factor by which the exchange rate may be multiplied in order to convert transactions in USD into MXN is being reduced from 1.01 to 1.005.	Jul 18, 2018

Table 5.1 (cont.) Major reforms to the regulatory framework applicable to universal banking: 2018

Publication	Summary	DOF
7. Banco de México: Circular 11/2018 amending the Mexican Interbank Electronic Payments System (SPEI) rules.	These amendments aim to strengthen risk management, beginning with the identification of clients other than financial institutions that, habitually and professionally, offer to exchange, buy or sell virtual assets. Notable measures include the additional validation by participants receiving transfer of funds orders from these clients; the ability of the system administrator to notify participants of instances when they must raise their monitoring and early warning mechanisms regarding the transfer of funds that they process using the SPEI, as well as the responsibilities incumbent upon SPEI participants' Chief Information Security Officers.	Jul 27, 2018
8. Banco de México: Circular 10/2018, amending the general provisions applicable to participants in the SPEI (risk mitigation)	The amendment to this provision seeks to address the additional risk posed by clients other than financial institutions that, habitually and professionally, offer to exchange, buy or sell virtual assets. It requires the accounts of these clients to be recognized and subject to the stricter AML identification requirements and requires any transfers of funds to these clients to be subject to additional validations. The provision also reinforces the risk management system in general, including requiring institutions to establish policies on trustworthiness vetting for their personnel and significant IT providers, and to appoint a Chief Information Security Officer.	Jul 27, 2018
9. CNBV: Resolution amending the general provisions applicable to credit institutions (identity theft)	The provisions establish identification methods for the signing of contracts and means of payment requests, and for cash withdrawals and transfers. They also establish verification measures, including biometric validation and database searches on the INE's (Instituto Nacional Electoral – Mexican electoral institute) voter roll database. The rules also provide for the possibility of non-face-to-face identification (digital onboarding).	Aug 29, 2018
10. CNBV: Resolution amending the general provisions applicable to credit institutions (credit provisioning to concessionaires)	Adjustments to the methodology used to calculate capital requirements for loans granted to concessionaires whose guarantee consists of federal budget contributions instrumented through a trust. The reform stipulates that in order for the guaranteed portion of the exposure to qualify for a 20% weight, the trustee must meet the requirements laid down in Appendix 24 to the Circular. This amendment ensures, inter alia, that the credit institution is positioned first beneficiary.	Sept 04, 2018
11. SHCP (Secretaría de Hacienda y Crédito Público – Ministry of Finance and Public Credit): General provisions pursuant to Article 58 of the FinTech Law	Extends the anti-money laundering and counter financing of terrorism provisions, already applicable to the rest of the financial system, to the new FinTech sector. FinTech customer accounts are classified into three risk levels, each with their own identification requirements and transaction limits.	Sept 10, 2018
12. Banco de México: Circular 12/2018 "General provisions applicable to transactions carried out by E-money institutions"	Sets limits for foreign currency transactions carried out by E-money institutions; establishes a process for prompt reimbursement of unrecognized charges to customers and stipulates that E-money institutions must participate in a payment system when warranted by the scale of their transactions, among others.	Sept 10, 2018

Table 5.1 (cont.) Major reforms to the regulatory framework applicable to universal banking: 2018

Publication	Summary	DOF
13.CNBV: General provisions applicable to FinTech institutions	Establishes prudential rules, accounting standards and rules for financial reporting and disclosure, among other things. The prudential rules contain important requirements, such as FinTech institutions minimum capital, the maximum amounts of cash to be accepted, and of transfers of funds abroad, by e-money institutions, limits to projects published on crowdfunding platforms, along with diversification requirements for their investors. The circular also sets forth requirements for the evaluation, selection and classification methodologies used for crowdfunding applicants and projects.	Sept 10, 2018
14.Banxico: Circulars 13 and 14 of 2018, amending Circulars 34/2010 and 3/2012, on protection for credit and debit card transactions, respectively	The provisions in these circulars aim to increase transaction security, promote the use of new technologies to enhance system efficiency and security, set minimum protection criteria for card users and prohibit unjustified differential treatment based on type of card.	Oct 03, 2018
15.CNBV: Resolution amending the general rules applicable to credit institutions (leverage ratio)	Revises the definition of leverage ratio and stipulates that any ratio below 3% will be deemed contrary to sound banking practices. It also sets forth leverage ratio disclosure requirements.	Oct 05, 2018
16.Banco de México: Circular 15/2018 applicable to credit institutions and the financing of national agricultural, rural, forestry and fisheries development, regarding the amendments to Circular 3/2012 (use of employment benefits in support of financial services contracted by workers).	The rule seeks to ensure that employees can use their salary to repay loans taken out with any bank on comparable conditions as those applicable to the bank administering the payroll account. The regulation seeks to address the risk associated with migrating payroll accounts to other banks after a loan has been granted. It also seeks to facilitate the processes required to enable employees to migrate their accounts.	Oct 29, 2018
17.Banxico: Circular 16/2018 amending Circular 3/2012 (subordinated bonds)	Brings the regulation in line with Basel Committee on Banking Supervision standards regarding the treatment of subordinated debt.	Nov 14, 2018
18.CNBV: Resolution amending the general provisions applicable to credit institutions (cybersecurity and payment orders via ATMs)	<p>Strengthens the provisions relating to information security in terms of confidentiality, integrity and availability. The reform aims to prevent and reduce the impact of risks, such as cyber-attacks, information theft, fraudulent operations or any type of IT event, that threatens the data of customers or employees of financial institutions. The regulation addresses five major topics: (1) Internal Control System, (2) Responsibilities of the Managing Director, (3) Creation of the Role of <i>Chief Information Security Officer (CISO)</i>, (4) Creation of a Security Master Plan and (5) Information Security Contingencies or Incidents.</p> <p>In an unrelated matter, the reform also includes changes that make the process of cashing payment orders via ATMs more flexible.</p>	Nov 27, 2018

Source: BBVA Research

## 6. Special topics included in previous issues

### First Half 2018

Risks limited to the financial system because of the possibility of the country's exiting NAFTA  
The 2017 Delinquency Rate (IMOR) for the private sector credit portfolio

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The new financial reform

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Statistics of the CNBV on lending to SMEs by federal state and indicators in judicial proceedings efficiency  
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